CSIS0801 Final Year Project 2014 – 2015
FYP14003 A Portable and Intelligent Interview System
Group Final Report

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Change History

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ABSTRACT

For years, the Department of Computer Science, HKU has established an early recruitment scheme for graduate studies. The scheme targets outstanding undergraduate students and master students studying in premier universities, no matter in mainland China or other places. The scheme offers different research areas of which the applicants of the scheme can choose, say, programming language, bioinformatics and algorithms, systems and networking, etc. As part of the recruitment process, an interview has to be conducted. In this project, we will create a student interview system for the better management for the interview process.

Due to the unavailability of internet connection for some of the interview venue, we would like to develop an offline system to cater the use of the professors. Integration of the interview process onto the system by video conferencing and recording feature is another point to note. Also, we would like to use data mining technique on the pre-interview and post-interview step to provide intelligent interview suggestions and statistics.

SECTION 1: PREFACE

1.1 Purpose

This document is to describe the finalized situation of "A Portable and Intelligent Interview System" Project, Final Year Project for the Department of Computer Science, HKU in 2014-2015. The following includes background and overview of the project, system design, deliverables, difficulties and limitations of the project as well as ideas for future development.

1.2 Scope

A Portable and Intelligent Interview System Project is a Final Year Project for the Department of Computer Science, HKU in 2014-2015. It aims to help manage the interview process of recruitment scheme for graduate studies of the Department of Computer Science, HKU. And therefore its target audience is set to be the applicants and the staff of the Department of Computer Science, HKU. Besides, some advanced features are added to make it more user-friendly as well as provide analysis on the past data.

1.3 About the Team and Stakeholder

Four Computer Science students of The University of Hong Kong participated in this project. The team is shown in the table below.

Team Members	Cheng Man Fung (Kevin) Fung Chin Pan (Andy) Lau Hiu Tsun (Anakin) (Contact Person) Tso Hei Lok (Lawrence)
School	The University of Hong Kong
Supervisor	Dr. Cheng Reynold
Second Examiner	Dr. Chui Chun Kit
Project Name	A Portable and Intelligent Interview System
Project Web Page	http://www.cs.hku.hk/~c0801/~fyp14003
Contact Mail	bobbylht@hku.hk

1.4 Credit

IntelliJ IDEA® is a trademark of JetBrains s.r.o.
WebRTC® is a trademark of Google Inc.
RecordRTC® is a trademark of Muaz Khan.
CodeIgniter® is a trademark of EllisLab, Inc., protected by applicable trademark, copyright and other intellectual property laws.

SECTION 2: PROJECT OVERVIEW

2.1 Background

As a research organization, the Department of Computer Science, HKU saw postgraduate studies and academic research as important parts of their jobs. The Department has thus established a recruitment scheme offering different research areas for the applicants to choose. Every year, hundreds of students around the world apply for the scheme. However, there are several concerns on proceeding the interview scheme.

First, processing of the applications manually is time-consuming and costly. To enhance the management of the interview process, a solution is required to reduce the cost and save time.

Second, there is a potential network connection problem on the face-to-face interview site in mainland China. To handle the possible bad network environment, finding out a way to manage the interview progress at anywhere and anytime is a must.

Third, picking up right candidates is always a difficult decision to the interviewers. Support must be done in order to help reach a consensus among the interviewers.

Through this project, our vision is to develop an application to help reduce the workload of the related staff. By doing so, the staff can concentrate more on recruiting outstanding students other than doing paper works.

2.2 Related Work

To explore more and help come up with an idea, we had did researches on the related work.

There is an existing system is developed for managing the information of the applicants. However, the face-to-face interviewing process, which is the core part of the flow of the recruitment scheme, is not included in the system. Video conferencing and recording function is not provided or maintained by the system and it is relying on third party equipment / software. The presentation of the information is also not satisfactory for managing the interview process smoothly.

Now, let's look at the existing products on the market. There are several commercial products offering different degrees of management on the interview process, such as DeGarmo Group's Fit Interview System, Active Interview and Recruiterbox. Some may include a video conferencing function. Some provide analysis on the effectiveness and consistency across interviewers. Some have excellent interfaces on managing applicants' information. Each of them provide individual solutions to help manage interview. But we found that seldom of these products are managed to compound the above features together. For the situation we faced now, the Department may require all of the above functions. However, it is obvious that no one would like to manage the interview process through 3 different platforms. So, an idea finally comes up in our mind: a Portable and Intelligent Interview System.

2.3 Project Objective

2.3.1 Enhance Interview Process

To enhance interview process by implementing the flow electronically, especially integrating video conferencing and recording function

2.3.2 Develop No-network Capability

To handle the possible bad network environment by providing managing tools with offline support, which smoothen the whole interview process in any situation

2.3.3 Provide Intelligence for Decision-Making

To improve the existing interview process by providing automated intelligence with the aid of data-mining techniques and statistical data

2.4 Amendment of Project Scope from Project Plan

After reviewing the project in these few months, some features were modified and added:

- "Preliminary Filtering": This feature is added as a filtering tool for the staff to eliminate inappropriate applicants fast. At the same time, the staff can review filtered applicants' details to further decide who can go to the on-site interview.

- "Comment Deletion": This feature is added as a utility to delete unwanted comments from the database.

- "Question Bank": In this section, the staff can add questions going to use in the interview and randomly pick up questions during the interview.

- "Charts": After reviewing, we have made use of the data in the database and generated more useful charts for the staff.

- "Cross Year Analysis": Other than current year, the staff may be also interested in the past year comparison. This feature is added to provide charts across past years to show trends and comparisons.

- "Form Analysis": This form is used to record extra-curricular activities of an applicant, so that when choosing possible candidates, the staff can compare these factors across the applicants.

- "Bulk E-mail": This feature is added to send email in large quantities. The staff can send bulk email to the chosen applicants through local email clients.

2.5 Project Deliverables

The project is divided into three phases. In each phase, there are different deliverables. Our team has achieved the targets of the project at each stage.

Phase & Period	Deliverables
Phase One – Inception (29 September 2014)	Detailed project plan: It describes the background, project overview and timeline in detail. Project web page: It provides a platform for public to know the project news and updates.
Phase Two – Elaboration (25 January 2015)	Preliminary implementation: Basic functions and user interfaces of the online and offline module were implemented. In additional, map analysis, charts and video conferencing are initially implemented as well. Detailed interim report: It describes the status, processes and implementations of the project at that stage.
Phase Three – Construction (19 April 2015)	Finalized tested implantation: The project is tested internally after and during implementation. Final report: The report, that is this report, included detailed description of the final product, implementations, challenges and improvements.

2.6 Major Work Products

In this project, there are two major work products – a system with both online and offline modules.

The basic functions of online module are available for all platforms with web browsers and internet connections. However, video recording function is only compatible with Opera, Chrome and Firefox.

The offline module is compatible with PCs with Java JRE 7 or above. Since we have no verified certificate, to enable HTTPS in offline module, a self-signed certificate needed to be imported before using the offline module.

2.7 Project Responsibility

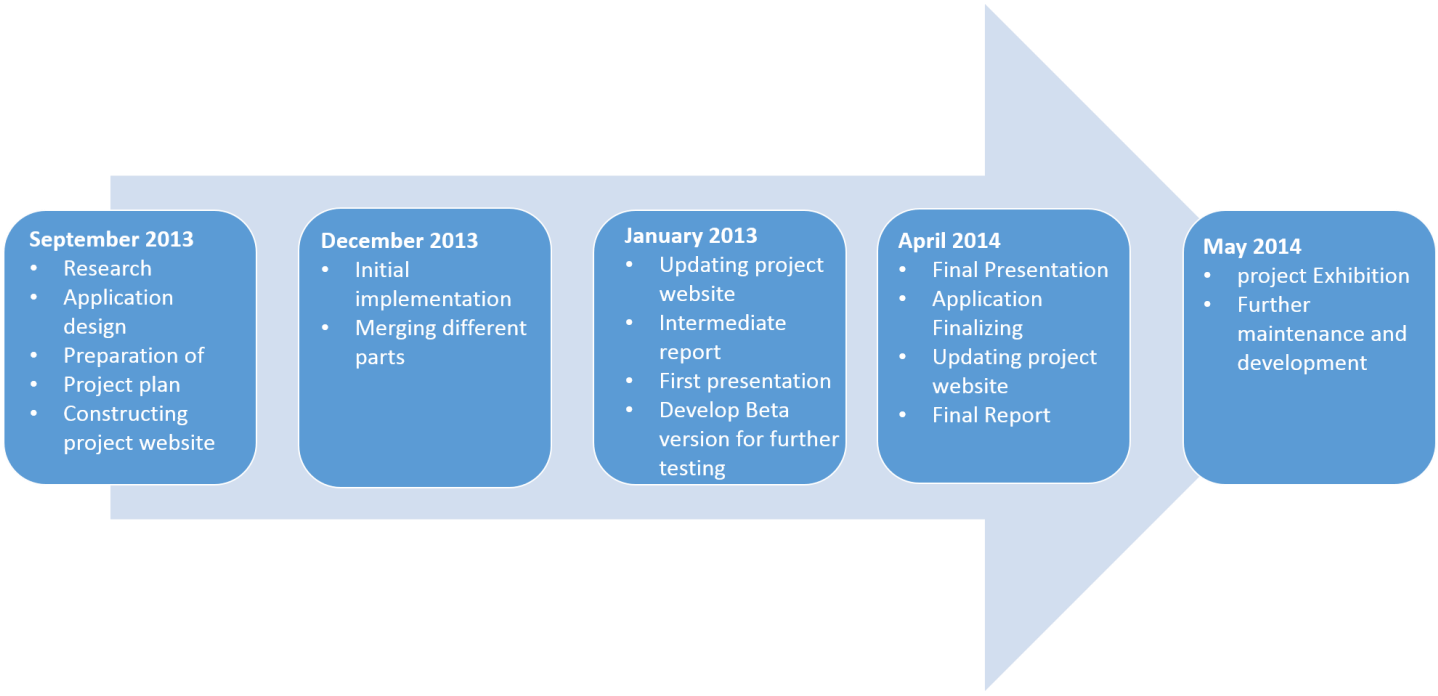
Major Project Function	Person Responsible
Contact person & person in charge	Anakin
Database: Offline Module	Anakin
Database: Online Module	All
Offline Module Implementation	Anakin
Online Module Features: Applicant - “Registration”	Andy
Online Module Features: Applicant - “Video conferencing”	Kevin
Online Module Features: Applicant - “View / Modify Application”	Andy
Online Module Features: Root - “Account Management”	Andy
Online Module Features: Root - “Round Management”	Andy
Online Module Features: Root/Staff - “Searching Engine”	Anakin, Andy
Online Module Features: Staff - "University Ranking"	Lawrence
Online Module Features: Staff - “Charts”	Anakin, Andy, Lawrence
Online Module Features: Staff - “Comment Management”	Anakin, Andy
Online Module Features: Staff - “Cross Year Analysis”	Andy, Lawrence
Online Module Features: Staff - “Email”	Kevin
Online Module Features: Staff - “Export Student List as CSV”	Kevin
Online Module Features: Staff - “Form Comparison”	Lawrence
Online Module Features: Staff - “Form Analysis”	Lawrence
Online Module Features: Staff - “Map Analysis”	Lawrence
Online Module Features: Staff - “Option”	Anakin
Online Module Features: Staff - “Preliminary Filtering”	Anakin
Online Module Features: Staff - “Printing Applicants Info”	Kevin
Online Module Features: Staff - “Question Bank”	Anakin
Online Module Features: Staff - “Student Operation”	Anakin
Online Module Features: Staff - “Teachers' Comment Analysis”	Lawrence
Online Module Features: Staff - “Video conferencing”	Kevin
Online Module Features: Staff - “Video recording”	Kevin
Online Module Features: Staff - “Video uploading”	Anakin
Project management and related task	Anakin
Project web page	Lawrence
Server Set-up	Andy
Testing and quality control	Anakin, Andy

2.8 Major Milestones

This project is divided into five phases and there are two major milestones.

The first major milestone is the initial implementation of the Interview system. It was released in January 2015. Most of the basic function of both online and offline modules have been finished. A beta version is released for testing at February 2015.

The second major milestone is the finalized tested implementation. The new features are described in this document in detail.



SECTION 3: PRODUCT DESIGN

3.1 Items of the Product Function

Major Project Function	Objective
Database: Offline Module	Store information downloaded from server to the local disk securely
Database: Online Module	Store information generated
Offline Module Implementation	Provide basic information management function whenever there is no network connection
Online Module Features: Applicant - “Registration”	Let applicants register to the scheme
Online Module Features: Applicant - “Video conferencing”	Allow applicants to have a pre-interview with the staff
Online Module Features: Applicant - “View / Modify Application”	Allow applicants to view / modify their application
Online Module Features: Root - “Account Management”	Allow the Administrator to manage existing user accounts and add new staff accounts
Online Module Features: Root - “Round Management”	Allow the Administrator to start a new academic year and manage the staff in the academic year
Online Module Features: Root/Staff - “Searching Engine”	Allow the user to search information with provided search fields
Online Module Features: Staff - "University Ranking"	Allow the staff to modify the ranking of universities
Online Module Features: Staff - “Charts”	Provide visualization of the data on the selected academic year
Online Module Features: Staff - “Comment Management”	Provide a platform for the staff to manage their comments for different applicants
Online Module Features: Staff - “Cross Year Analysis”	Provide visualization of the past year data
Online Module Features: Staff - “Email”	Provide a tool for the staff to send notification to applicants more easily
Online Module Features: Staff - “Export Student List as CSV”	Generate a csv file of the listed applicants
Online Module Features: Staff - “Form Comparison”	Provide comparison for the onsite form across two students
Online Module Features: Staff - “Form Analysis”	Allow the staff to modify the weighting of different items in the form and fill in forms
Online Module Features: Staff - “Map Analysis”	Visualize the location of applicants’ universities
Online Module Features: Staff - “Option”	Allow the staff to change the selected academic year
Online Module Features: Staff - “Preliminary Filtering”	Filter out applicants which do not fulfill the basic requirement
Online Module Features: Staff - “Printing Applicants Info”	Allow the staff to print the profile of an applicant
Online Module Features: Staff - “Question Bank”	Allow the staff to customize own questions
Online Module Features: Staff - “Student Operation”	Allow the staff to add, view or modify the profile of applicants
Online Module Features: Staff - “Teachers' Comment Analysis”	Provide analysis and give recommendation on the teacher on-site comment
Online Module Features: Staff - “Video	Allow the staff to start a conferencing session

conferencing"	
Online Module Features: Staff - "Video recording"	Allow the staff to record the conferencing and upload to the server
Online Module Features: Staff - "Video uploading"	Allow the staff to upload applicants' interview video to the server
Server Set-up	Provide basic infrastructure for the system

3.2 Software and Hardware Requirement

In this project, there are some software and hardware requirements for online module:

1. Computer with network access and web browser is a must for accessing the server.
2. Computer with a web camera and a microphone is required for the use of video recording.

For offline module:

1. Computer with network access is required to download information from the server.
2. Computer installed with JAVA JRE 7 is a must to run the offline module.

3.3 System Architecture

Model View Controller (MVC)

For the online module, we based on Code Igniter which uses passive view model of MVC as its design pattern.

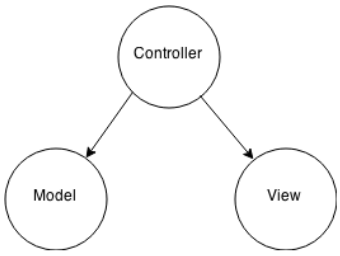


Fig 4.1.1 MVC model

View components are the components responsible for the interface and display of the web application. Multiple views can combine together to construct a single webpage. Model components refer to the small functional modules that carry out logical calculation and evaluation. It is also used as the component extracting or altering data in database. Controller components are the components commanding the other 2 types of components mentioned above. Upon request from client browser, it extracts the resultant data from model component evaluation and passes it to the multiple views to generate a complete webpage.

By the MVC pattern, we can achieve separation of code, i.e. separate code for presentation and logical evaluation of data, which allow us to have a better organization and readability of code for the entire project.

As a minor footnote, Code Igniter also provides lots of libraries including, but not limited to, form helpers and query helpers. The more helpers we have, the more we can focus on high level idea design but not low level implementation, hence increased efficiency for implementation.

Decorator Pattern

For offline module, decorator pattern is employed to avoid clumsy flow control or creation of many subclasses for combinations of search criteria in the filter student record function. Decorators for each search criterion chain up and stack up their functionality to carry out filtering operation, thus give a highly readable, easy to maintain and flexible coding.

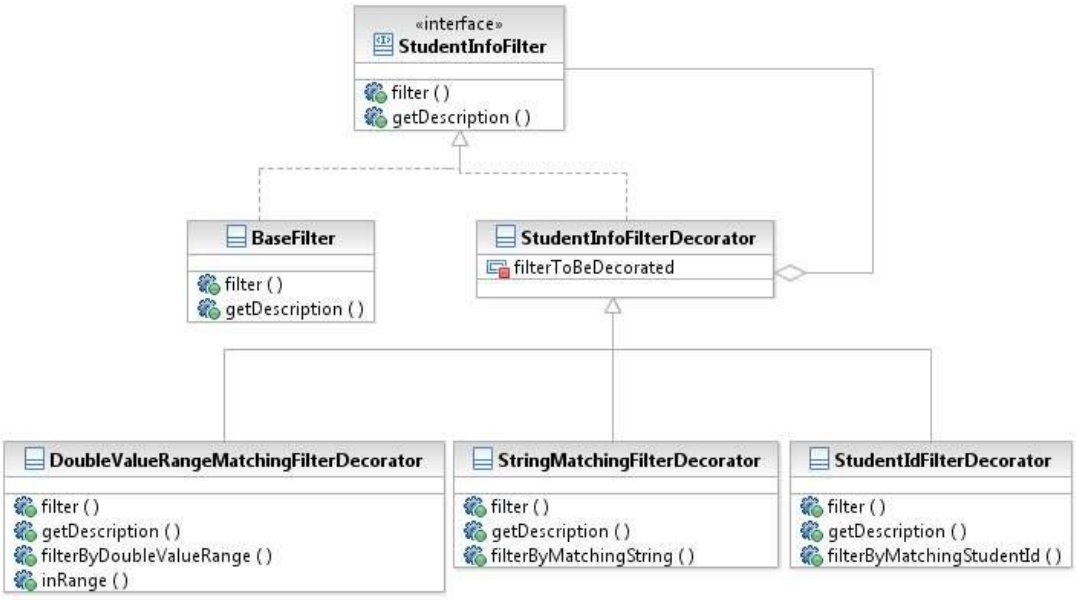
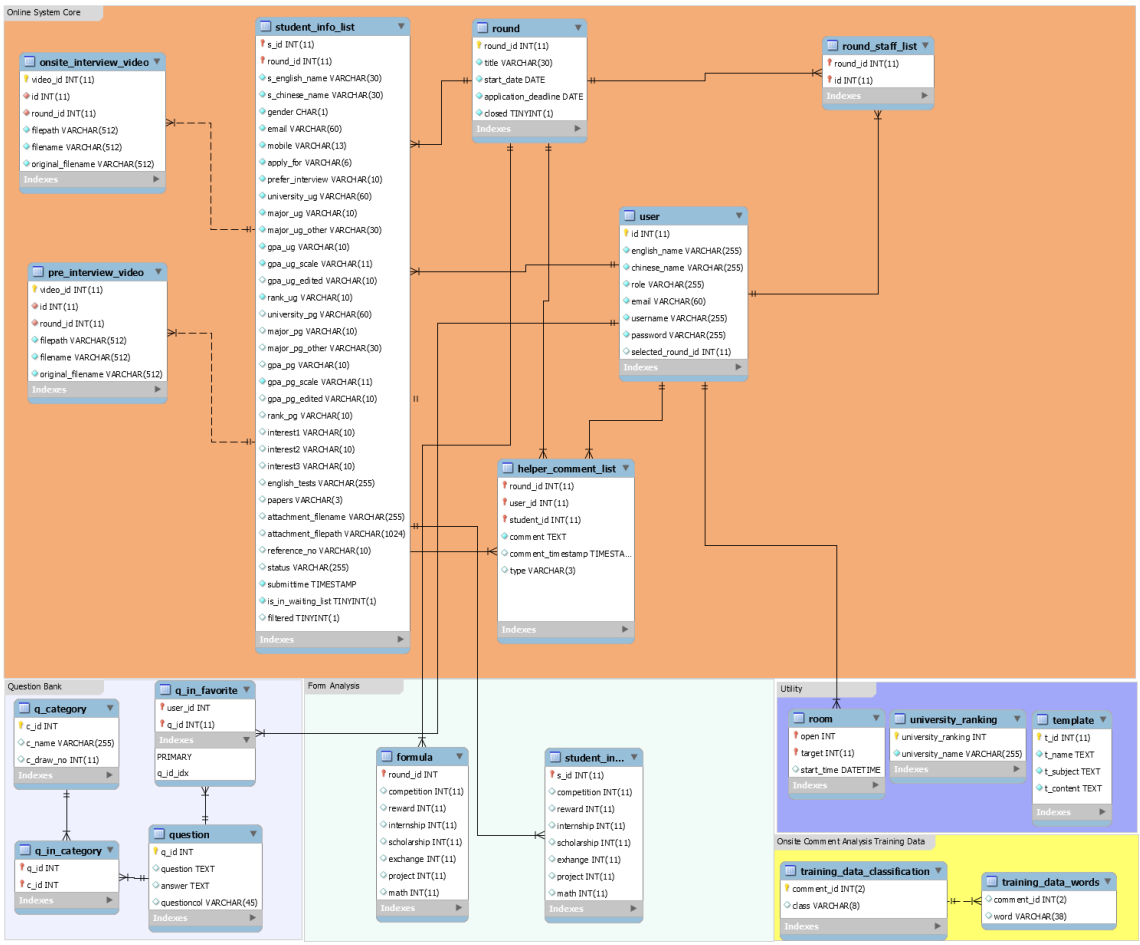


Fig 4.1.2 Decorator pattern in offline module

3.4 Database Design

The database tables are divided into 5 groups: online module core part, comment analysis part, form analysis part, question bank and utility part.



Online module core part consists of tables for the interview round information, user account information and credentials to facilitate the authentication and authorization to the confidential information inside. There are also tables for student applicants' information where the full application records of the student applicants are stored. Comments and video functionalities are served by separate tables to avoid amendment to other reviewers' comment accidentally, which are the case in the system currently used by the department where the comments from different reviewers are grouped together as a single comment, and store the location of the video on server respectively.

The comment analysis part consists of tables storing training data of the Naïve Bayes Classifier for the onsite comment analysis. Each comment in the training data is labeled with an id and a tone (positive / negative) classified manually. Words in each training data comment are selected through data cleaning, store in a table and related to a comment in the previous table by an id. This provides structured training data for the training of the Bayesian Classifier.

The form analysis part consists of tables storing the students' performance on varies aspects judged by reviewers, as well as the weighting of each criteria for each round to give out the final score for the student applicant.

The question bank part consist of tables to store the questions and categories of question bank, their relationship, as well as the favorite set of questions for each reviewer.

The utility part consists of a table storing the email templates which enables the reviewers and helpers to send prepared email to the students, the room opened for video conferencing to allow alerting student applicants on imminent pre-interview chat and also university ranking list for varies analysis usage.

3.5 Secure Communication Channel

PIIS provide secure application layer symmetric key encryption HTTPS channel for communication between client (browser/offline module) and online module server. All confidential information including student applicants' information and user credentials are protected over the internet against packet capturing software.

3.6 Software Development Process

For the development of PIIS, we adopt iterative development cycle approach. Each cycle span varies from 2 weeks to a month. For each development cycle, we have a definitive goal based on the requirement received during planning stage. At the end of the cycle, the developed artifact was tested. After each iteration, the product is a workable release such that we can develop with an incremental approach, which is a great approach to adapt to change in requirement.

3.7 Testing and Quality Assurance

Monitoring and Controlling

Dropbox and Google drive were the means to keep and manage different versions of the PIIS, be it online module, offline module or the database. When merging different member's work, conflict in code is resolved manually with varies tools, for example, notepad++ compare plugin, Beyond Compare 4 and Meld Diff Viewer.

Testing (See APPENDIX XVII)

Other than the testing at the end of each cycle, we conducted a smoke test before the intermedia presentation to test for the basic functionality and workability of the release before the intermedia presentation. The smoke test consists of pre-written functional tests of scenarios of users with different role using the system. The functional tests were designed to cover as much scenarios as possible.

Due to limited time and resources, we conducted another exploratory testing right before the final presentation. Exploratory testing tends to discover defects quickly with creative approach encouraged, which meets our needs to remove defects at high efficiency and low cost. Note that this project will continue even after the end of the Final Year Project, the user acceptance test shall be conducted right after the release of the beta version of PIIS.

SECTION 4: Implementation and Project Deliverables Summary

4.1 Project Deliverable

In the last stage of this project, which is the construction phase, there are two deliverables including this final report and the final tested implementation. The detail description of the final tested implementation can be found in this document. In this chapter 4, technical details will be elaborated and individual reports of each group member are suggested to be viewed for more details in different functions.

4.2 Development Toolkit

In this project, we have selected CodeIgniter and IntelliJ IDEA as our development platforms and a few plug-in to add some specific features to the application.

Online Module

As we would like to build online module of PIIS in MVC pattern, we choose CodeIgniter as our development tool. CodeIgniter is an open source rapid development web application framework, for use in building dynamic web sites with PHP.

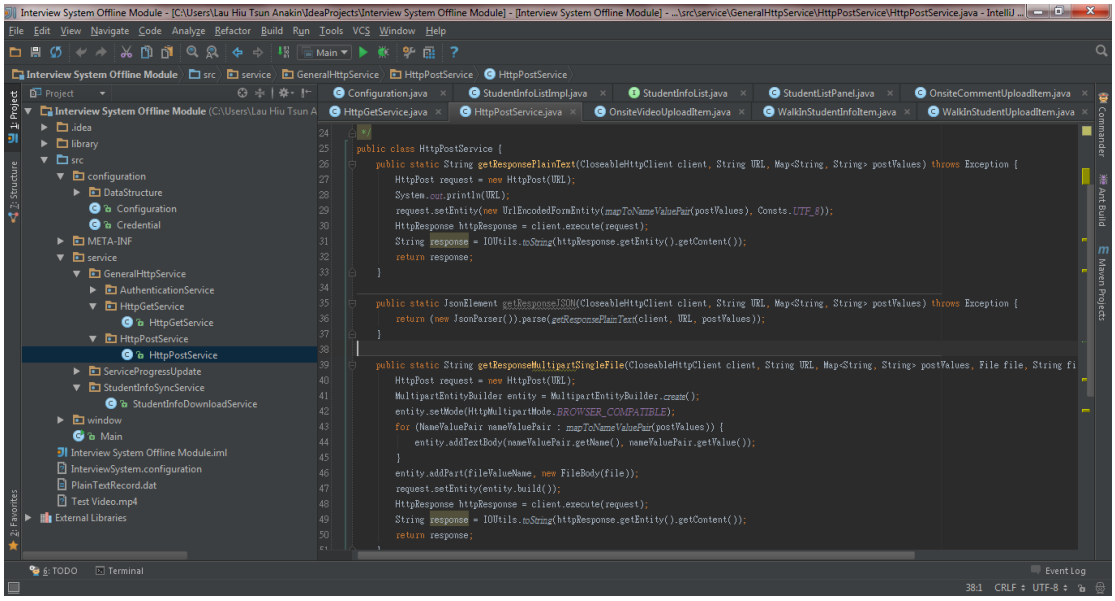
An API is a set of routines, protocols, and tools for building software applications. The major APIs that we used include Google Chart API, WebRTC and RecordRTC.

WebRTC is an API that supports browser-to-browser applications for voice calling, video chat, and P2P file sharing without the need of either internal or external plugins. It is easy-to-use and secure which is good for implementing video conferencing in our online module.

RecordRTC is a JavaScript-based media-recording library for modern web-browsers (supporting WebRTC getUserMedia API). It is optimized for different devices and browsers to bring all client-side (plugin-free) recording solutions in single place.

Offline Module

For the development of the offline module, IntelliJ IDEA was employed as the IDE for the offline module which is based on JAVA SE 7. IntelliJ, which is developed by JetBeans, has numerous notable features which are beneficial to the development process. Its auto-completion of class names, methods and variable names saves much effort during implementation. With few key strokes, IntelliJ IDEA tends to guess the classes, methods or variable names correctly to provide auto-filling options, hence obviously shortened the time needed for implementation as you never have to type out every single character in your code. Also, IntelliJ optimized key bindings of many options by default. Notable examples are refactoring, syntax and other error fixing and generation of code. Just get familiar with the key bindings and the development process will become lightning fast.



IntelliJ IDEA

The offline module was also developed based on several Java libraries. The first one is Apache Commons HTTPClient. HTTPClient is the Java library under Apache HttpComponents™ project to fill the void of inflexibility of java.net package and provide an efficient, up-to-date, and feature-rich package implementing the client side of the most recent HTTP standards and recommendations. It is mainly used to construct HTTP GET and POST request to be sent to the online module server for downloading the student information and upload comments, videos and walk-in student information to the online module with more comprehensible method calls.

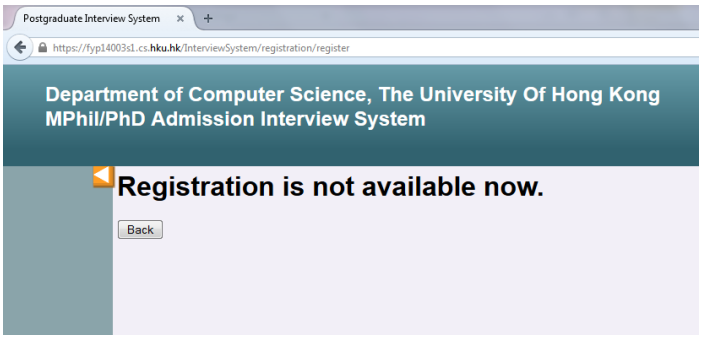
Google GSON was another library employed. It is a project under Google to convert JSON object to and from Java object and was mainly used to serve the same functionality in Java, with method abstraction, as JSON.parse and JSON .stringify of javascript to parse the communication between the offline module and online module, which is in JSON format.

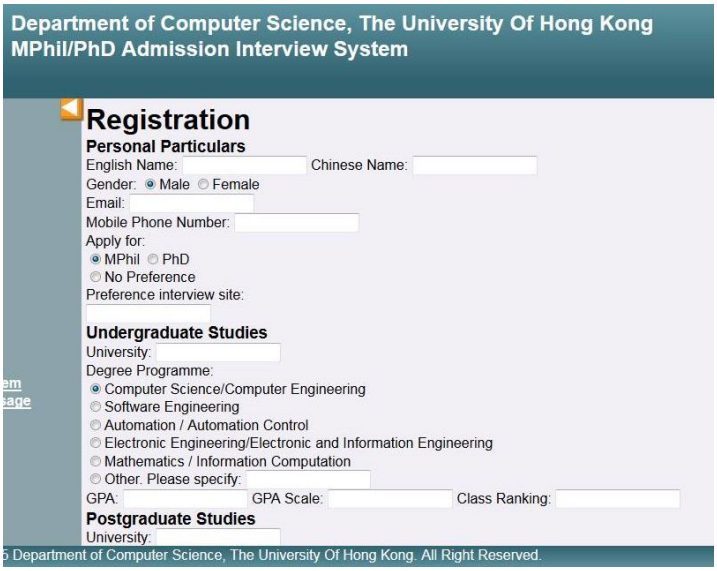
The last notable library used was Google Guava. Google Guava is a core Java library mainly developed by Google engineers for multiple other projects they have. The library includes wide variety of helpers and functionalities including collections, caching, primitives support, concurrency libraries, common annotations, string processing, I/O, and more. In the context of offline module, the Immutable Map and Bi-Map collections were heavily utilized for, but not limited to, construction of data structures for readable text to assigned code conversion and POST message key-value pair.

4.3 Implementation and User Interface

4.3.1 Applicant - "Registration"

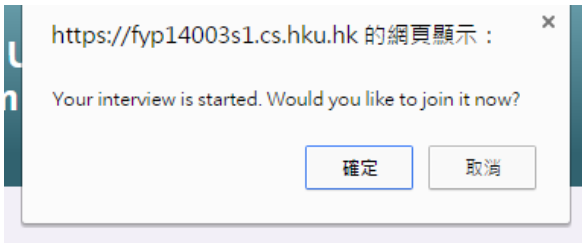
In Registration, applicants can apply for the scheme by filling in the required fields. If application is not available on the time, the page will show a warning message to applicants.





4.3.2 Applicant - "Video conferencing" (See APPENDIX X)

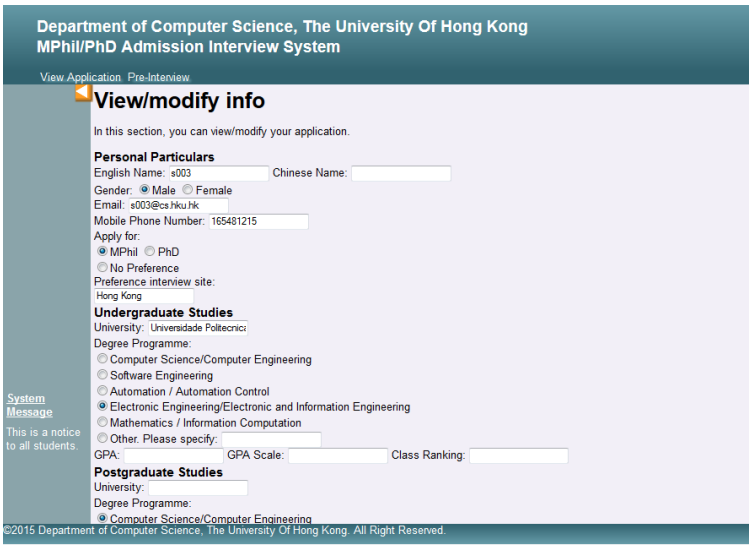
An alert will be sent to the target interviewee when a reviewer created a room for the pre-interview video conferencing.



By confirming the message, interviewee will enter the chat room for the pre-interview chat.

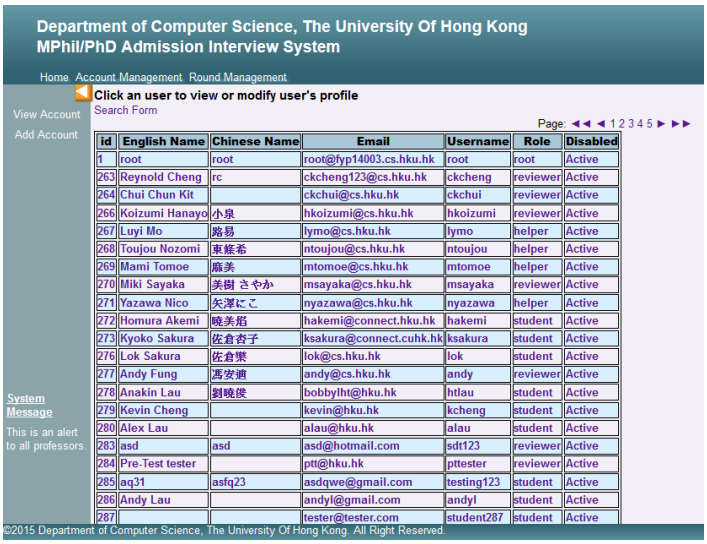
4.3.3 Applicant - "View / Modify Application"

In this section, applicants can view and modify their applications before the 2nd application deadline.



4.3.4 Root - "Account Management"

In Account Management, the administrator can view and modify all the accounts.


Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Account Management Round Management
View Account
Add Account
Click an user to view or modify user's profile
Search Form
Page: 1 2 3 4 5
id | English Name | Chinese Name | Email | Username | Role | Disabled
1 | root | root | root@fyp14003.cs.hku.hk | root | root | Active
263 | Reynold Cheng | rc | ckcheng123@cs.hku.hk | ckcheng | reviewer | Active
264 | Chui Chun Kit | | ckchui@cs.hku.hk | ckchui | reviewer | Active
266 | Koizumi Hanayo | 小泉 | hkoizumi@cs.hku.hk | hkoizumi | reviewer | Active
267 | Luyi Mo | 路易 | lymo@cs.hku.hk | lymo | helper | Active
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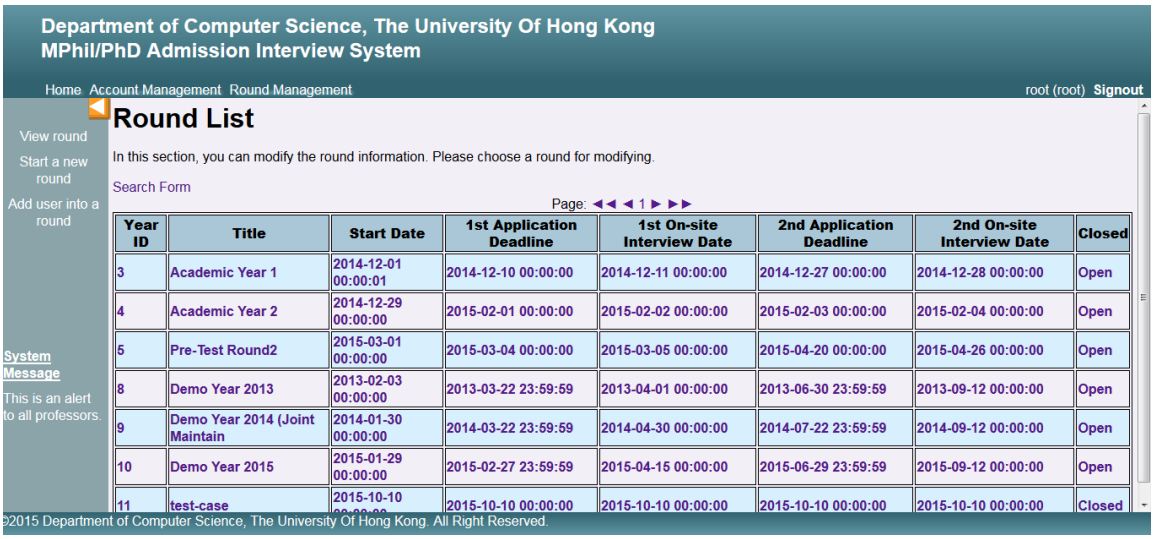
273 | Kyoko Sakura | 佐倉杏子 | ksakura@connect.cuhk.hk | ksakura | student | Active
276 | Lok Sakura | 佐倉 樂 | lok@cs.hku.hk | lok | student | Active
277 | Andy Fung | 馮安迪 | andy@cs.hku.hk | andy | reviewer | Active
278 | Anakin Lau | 劉曉俊 | bobbylht@hku.hk | htlau | student | Active
279 | Kevin Cheng | | kevin@hku.hk | kcheng | student | Active
280 | Alex Lau | | alau@hku.hk | alau | student | Active
283 | asd | asd | asd@hotmail.com | sdt123 | reviewer | Active
284 | Pre-Test tester | | ptt@hku.hk | pttester | reviewer | Active
285 | aq31 | asfq23 | asdqwe@gmail.com | testing123 | student | Active
286 | Andy Lau | | andyl@gmail.com | andyl | student | Active
287 | | | tester@tester.com | student287 | student | Active
System Message
This is an alert to all professors
©2015 Department of Computer Science, The University Of Hong Kong. All Right Reserved.

Also, the administrator can add new staff accounts into the system.

4.3.5 Root - "Round Management"

In Round Management, the administrator can view and modify all the rounds created.


Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Account Management Round Management
root (root) Signout
View round
Start a new round
Add user into a round
System Message
This is an alert to all professors.
Round List
In this section, you can modify the round information. Please choose a round for modifying.
Search Form
Page: ◄◄ ◄ 1 ► ►►
Year ID | Title | Start Date | 1st Application Deadline | 1st On-site Interview Date | 2nd Application Deadline | 2nd On-site Interview Date | Closed
3 | Academic Year 1 | 2014-12-01 00:00:01 | 2014-12-10 00:00:00 | 2014-12-11 00:00:00 | 2014-12-27 00:00:00 | 2014-12-28 00:00:00 | Open
4 | Academic Year 2 | 2014-12-29 00:00:00 | 2015-02-01 00:00:00 | 2015-02-02 00:00:00 | 2015-02-03 00:00:00 | 2015-02-04 00:00:00 | Open
5 | Pre-Test Round2 | 2015-03-01 00:00:00 | 2015-03-04 00:00:00 | 2015-03-05 00:00:00 | 2015-04-20 00:00:00 | 2015-04-26 00:00:00 | Open
8 | Demo Year 2013 | 2013-02-03 00:00:00 | 2013-03-22 23:59:59 | 2013-04-01 00:00:00 | 2013-06-30 23:59:59 | 2013-09-12 00:00:00 | Open
9 | Demo Year 2014 (Joint Maintain | 2014-01-30 00:00:00 | 2014-03-22 23:59:59 | 2014-04-30 00:00:00 | 2014-07-22 23:59:59 | 2014-09-12 00:00:00 | Open
10 | Demo Year 2015 | 2015-01-29 00:00:00 | 2015-02-27 23:59:59 | 2015-04-15 00:00:00 | 2015-06-29 23:59:59 | 2015-09-12 00:00:00 | Open
11 | test-case | 2015-10-10 | 2015-10-10 00:00:00 | 2015-10-10 00:00:00 | 2015-10-10 00:00:00 | 2015-10-10 00:00:00 | Closed
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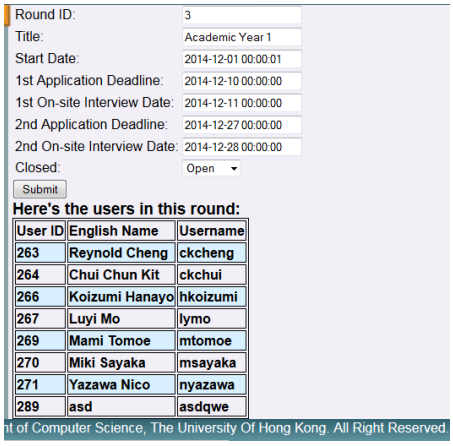
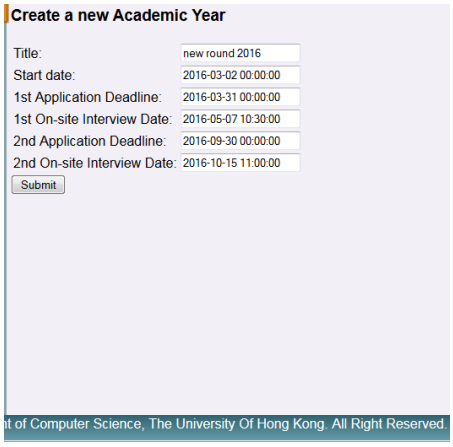

Round ID: 3
Title: Academic Year 1
Start Date: 2014-12-01 00:00:01
1st Application Deadline: 2014-12-10 00:00:00
1st On-site Interview Date: 2014-12-11 00:00:00
2nd Application Deadline: 2014-12-27 00:00:00
2nd On-site Interview Date: 2014-12-28 00:00:00
Closed: Open
Submit
Here's the users in this round:
User ID | English Name | Username
263 | Reynold Cheng | ckcheng
264 | Chui Chun Kit | ckchui
266 | Koizumi Hanayo | hkoizumi
267 | Luyi Mo | lymo
269 | Mami Tomoe | mtomoe
270 | Miki Sayaka | msayaka
271 | Yazawa Nico | nyazawa
289 | asd | asdqwe
t of Computer Science, The University Of Hong Kong. All Right Reserved.


Create a new Academic Year
Title: new round 2016
Start date: 2016-03-02 00:00:00
1st Application Deadline: 2016-03-31 00:00:00
1st On-site Interview Date: 2016-05-07 10:30:00
2nd Application Deadline: 2016-09-30 00:00:00
2nd On-site Interview Date: 2016-10-15 11:00:00
Submit
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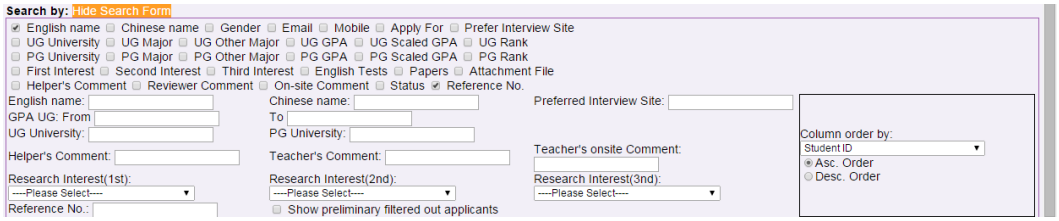
Starting a new round and giving the staff privilege to access the created round can also be done in this section.

Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Account Management Round Management
root (root) Signout
View round
Start a new round
Add user into a round
Academic Year 1
User ID | English Name | Chinese Name | Email | User Name | Role
268 | Toujou Nozomi | 東條希 | ntoujou@cs.hku.hk | ntoujou | helper
277 | Andy Fung | 馮安迪 | andy@cs.hku.hk | andy | reviewer
283 | asd | asd | asd@hotmail.com | sdt123 | reviewer
284 | Pre-Test tester | | ptt@hku.hk | pttester | reviewer
296 | teamviewer | | team@batman.org | team | reviewer
Add to the round

4.3.6 Root/Staff - "Searching Engine"

In different stage of the system, student applicants' records are of too much for manual lookup. PIIS provides a search engine with:

1) Customizable column to display
2) Keyword (English name, varies comments)/ Range (GPA) search
3) Skipping preliminary filtered out applicants
4) Ordering of student applicants by one of the column, in ascending or descending order.


Search by: Hide Search Form
English name Chinese name Gender Email Mobile Apply For Prefer Interview Site
UG University UG Major UG Other Major UG GPA UG Scaled GPA UG Rank
PG University PG Major PG Other Major PG GPA PG Scaled GPA PG Rank
First Interest Second Interest Third Interest English Tests Papers Attachment File
Helper's Comment Reviewer Comment On-site Comment Status Reference No.
English name:
Chinese name:
Preferred Interview Site:
GPA UG: From
To
UG University:
PG University:
Column order by:
Student ID
Asc. Order
Desc. Order
Helper's Comment:
Teacher's Comment:
Teacher's onsite Comment:
Research Interest(1st):
Research Interest(2nd):
Research Interest(3nd):
----Please Select----
Reference No.:
Show preliminary filtered out applicants

Search Form of PIIS

The search form could be toggled to hide or show. Upon change in the form's value, the table below showing the search result will automatically refresh.

4.3.7 Staff - "University Ranking" (See APPENDIX I)

Since we think that university ranking of students postgraduate and undergraduate universities would help a lot in the pre-interview and post-interview process, we decided to provide the QS World University Rankings 2014/2015, which provide 200 universities on computer science for reviewers to have more information about students. We have provided university rankings for both individuals and rounds. For individuals, we provide university ranking when reviewers view the student information. For rounds, we provide statistical data in chart forms. Also, we provide functions to view and modify university ranking. You can view it on the online system directly. If there is any changes in the next few years, helpers can download a csv files for current round and modify the csv files to update the latest information and upload back to the system conveniently.

University Ranking
Download current QS University Ranking
Export current university ranking
Choose your file to upload the latest ranking:
Choose File No file chosen
Submit
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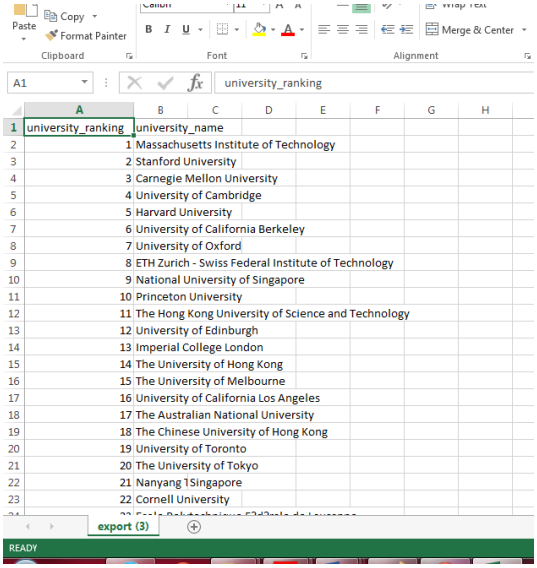
University Ranking	University Name
1	Massachusetts Institute of Technology
2	Stanford University
3	Carnegie Mellon University
4	University of Cambridge
5	Harvard University
6	University of California
7	University of Oxford
8	ETH Zurich - Swiss Federal Institute of Technology
9	National University of Singapore
10	Princeton University
11	The Hong Kong University of Science and Technology
12	University of Edinburgh
13	Imperial College London
14	The University of Hong Kong
15	The University of Melbourne
16	University of California 2
17	The Australian National University
18	The Chinese University of Hong Kong
19	University of Toronto
20	The University of Tokyo
21	Nanyang Technological University

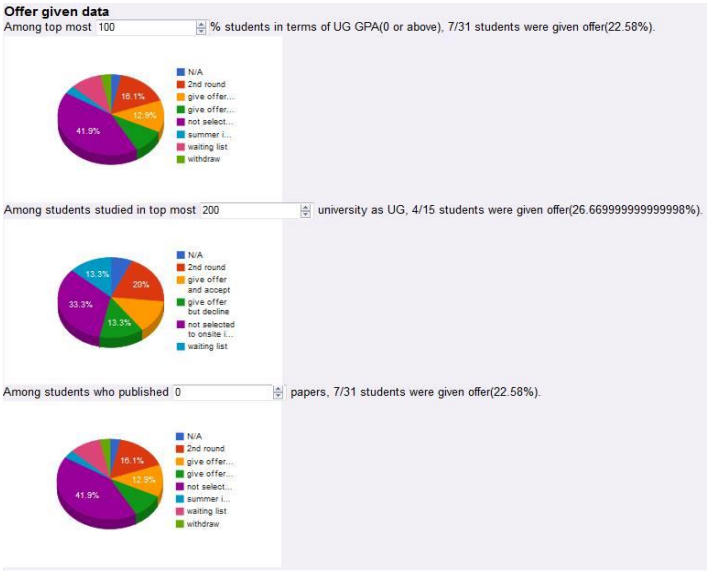


	A	B
1	university_ranking	university_name
2	1	Massachusetts Institute of Technology
3	2	Stanford University
4	3	Carnegie Mellon University
5	4	University of Cambridge
6	5	Harvard University
7	6	University of California Berkeley
8	7	University of Oxford
9	8	ETH Zurich - Swiss Federal Institute of Technology
10	9	National University of Singapore
11	10	Princeton University
12	11	The Hong Kong University of Science and Technology
13	12	University of Edinburgh
14	13	Imperial College London
15	14	The University of Hong Kong
16	15	The University of Melbourne
17	16	University of California Los Angeles
18	17	The Australian National University
19	18	The Chinese University of Hong Kong
20	19	University of Toronto
21	20	The University of Tokyo
22	21	Nanyang TSingapore
23	22	Cornell University

4.3.8 Staff - "Charts" (See APPENDIX II)

Google Chart API is used to show statistical information. This can help the staff to manage the interview process and understand student interests. With the pie chart of Applicants' choice on Interview Site, the staff can choose a better interview site to enhance onsite interview process. Also, the distributions of first, second and third interest can show which research topics are more popular to students. In the future, the Department of Computer Science, HKU can manage the resources better in different topics.

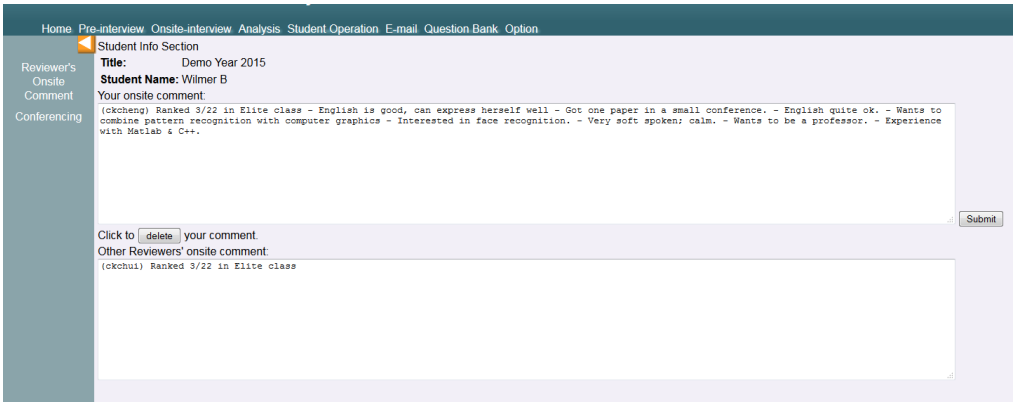
Other than the above charts, the staff can check the offer given data with the relationship of GPA, university ranking and the number of papers published by applicants.



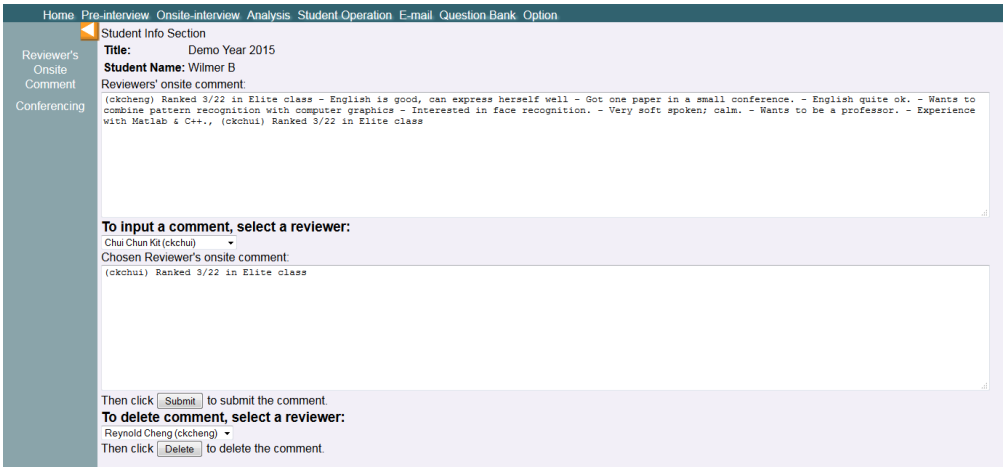
4.3.9 Staff – "Comment Management"

Comment management is further divided into 3 parts: "Helper Comments" and "Reviewer's Comment" in pre-interview phase and "Reviewer's Onsite Comment" in the on-site interview phase. According to the user requirement, the privilege of the role "Helper" and "Reviewer" would have differences and so as the design of the user interface.

For reviewers, they can read helpers' and other reviewers' comments. Moreover, they can delete or modify their own comments in all interview phases.

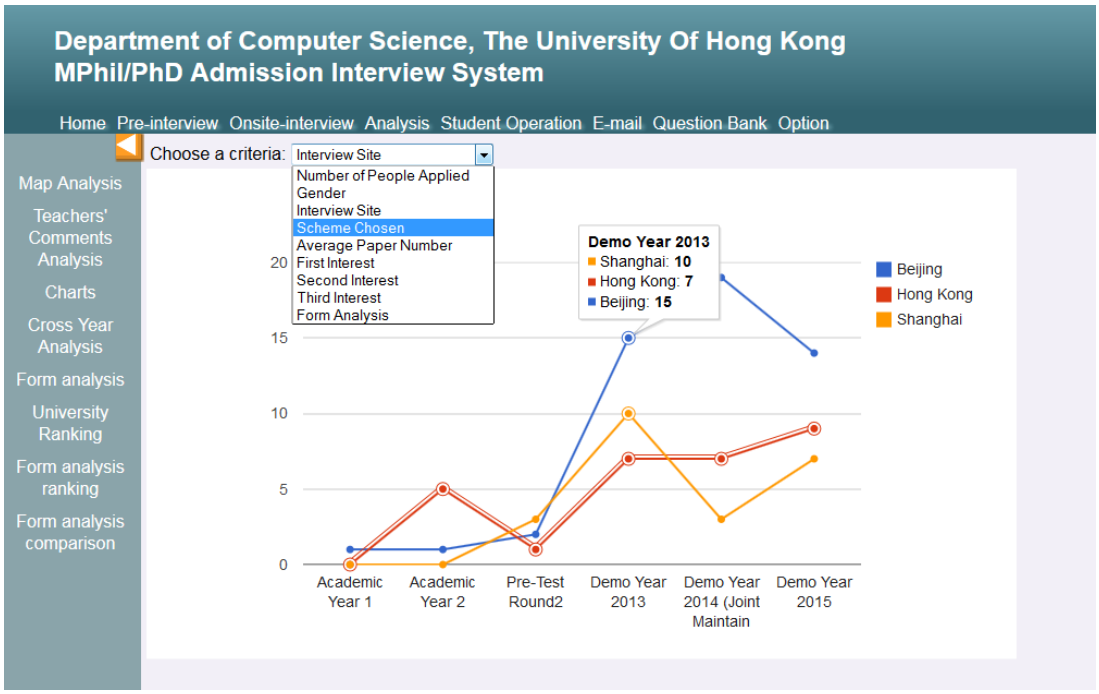

Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
Reviewer's Onsite Comment
Conferencing
Student Info Section
Title: Demo Year 2015
Student Name: Wilmer B
Your onsite comment:
(ckcheng) Ranked 3/22 in Elite class - English is good, can express herself well - Got one paper in a small conference. - English quite ok. - Wants to combine pattern recognition with computer graphics - Interested in face recognition. - Very soft spoken; calm. - Wants to be a professor. - Experience with Matlab & C++.
Submit
Click to delete your comment.
Other Reviewers' onsite comment:
(ckchui) Ranked 3/22 in Elite class

For helpers, they can also read other helpers' comments. And they have the privilege of modifying and deleting all reviewers' comments in all interview phases. This is because reviewers may not have the time to input comments themselves and hence need the help of the helpers.


Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
Reviewer's Onsite Comment
Conferencing
Student Info Section
Title: Demo Year 2015
Student Name: Wilmer B
Reviewers' onsite comment:
(ckcheng) Ranked 3/22 in Elite class - English is good, can express herself well - Got one paper in a small conference. - English quite ok. - Wants to combine pattern recognition with computer graphics - Interested in face recognition. - Very soft spoken; calm. - Wants to be a professor. - Experience with Matlab & C++., (ckchui) Ranked 3/22 in Elite class
To input a comment, select a reviewer:
Chui Chun Kit (ckchui)
Chosen Reviewer's onsite comment:
(ckchui) Ranked 3/22 in Elite class
Then click Submit to submit the comment.
To delete comment, select a reviewer:
Reynold Cheng (ckcheng)
Then click Delete to delete the comment.

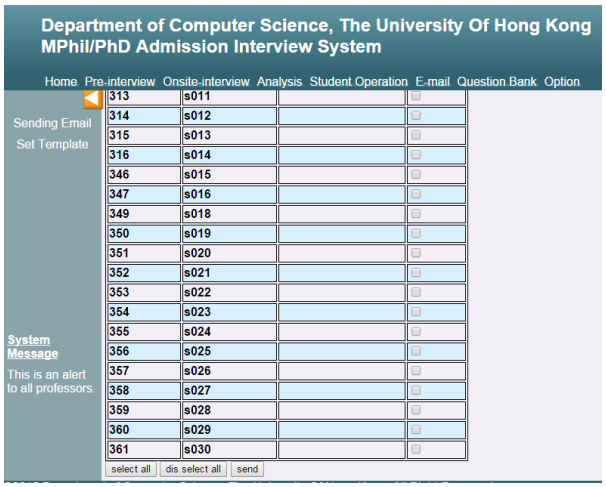
4.3.10 Staff - "Cross Year Analysis" (See APPENDIX III)

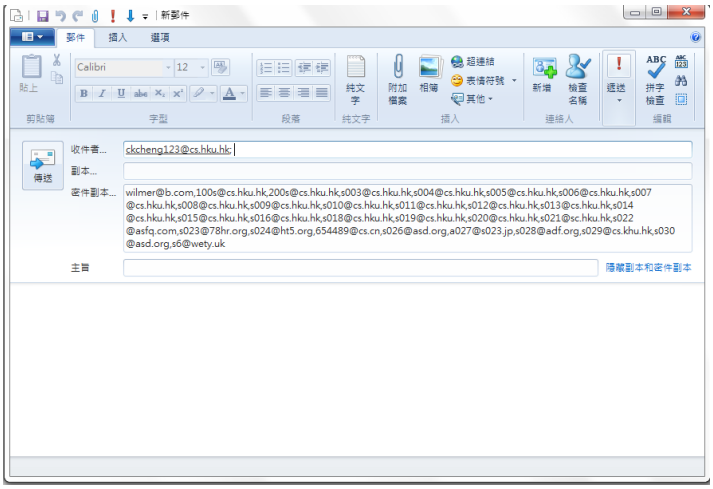
To provide an overview for the staff, cross year analysis is implemented to display statistical data in the past years. Through these graphs, the staff can know more about the trend of the applicants' behaviors in several criteria: number of applicants, gender, interview site, scheme chosen, average paper number, interests and form analysis. Hence, from these analysis, the Department may decide to choose a proper interview site and reallocate the resources in next academic year. In this way, we hope that the pattern and trend of the past data can help improve the arrangement of the interview process.



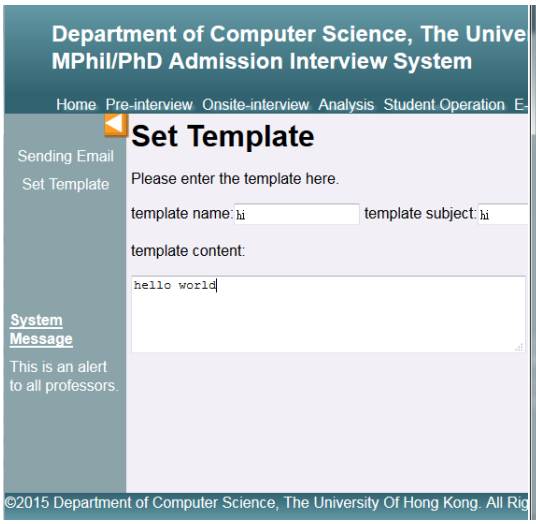
4.3.11 Staff - “Email”

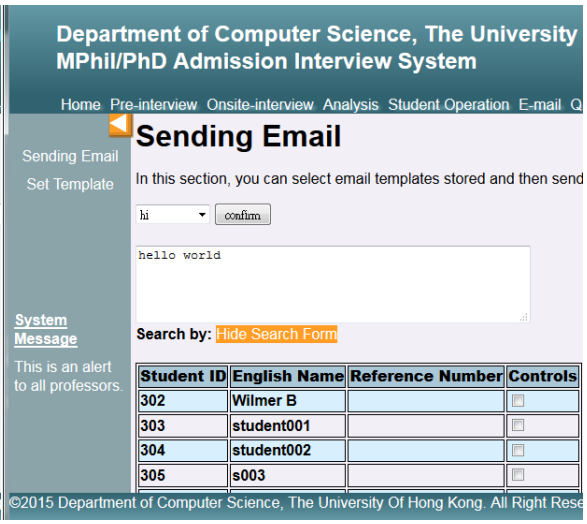
In “E-mail”, the staff can send bulk e-mail to the selected interviewees through the e-mail client.


Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
Sending Email
Set Template
System Message
This is an alert to all professors.
select all
dis select all
send



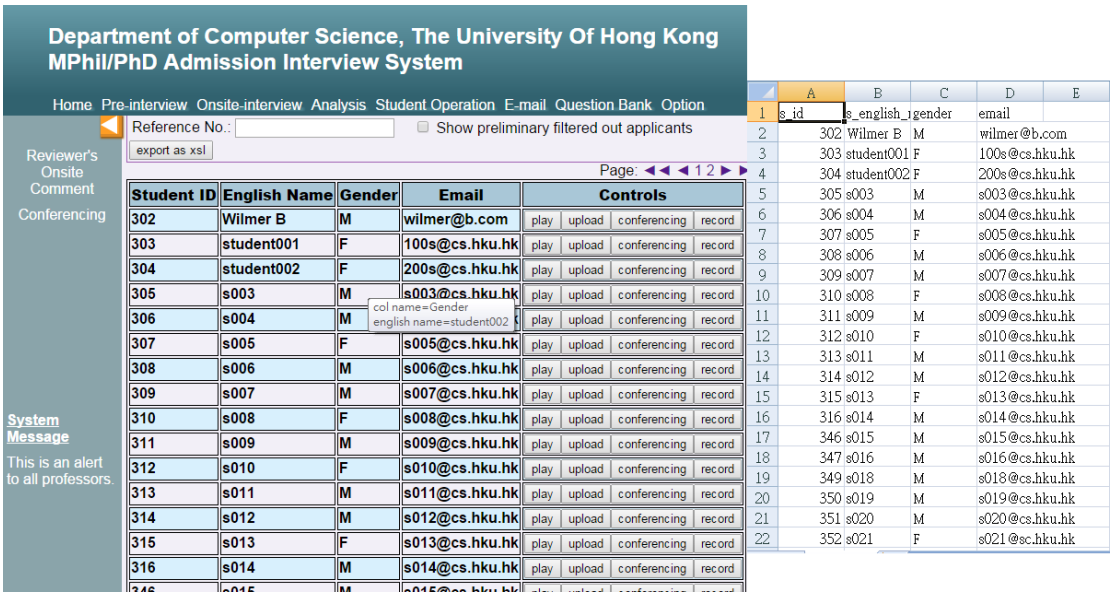
Also, the staff can set e-mail templates. Users do not need to retype the e-mail contents if the template is set.


Department of Computer Science, The Unive
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-
Sending Email
Set Template
Set Template
Please enter the template here.
template name: hi
template subject: hi
template content:
hello world
System Message
This is an alert to all professors.
©2015 Department of Computer Science, The University Of Hong Kong. All Rig



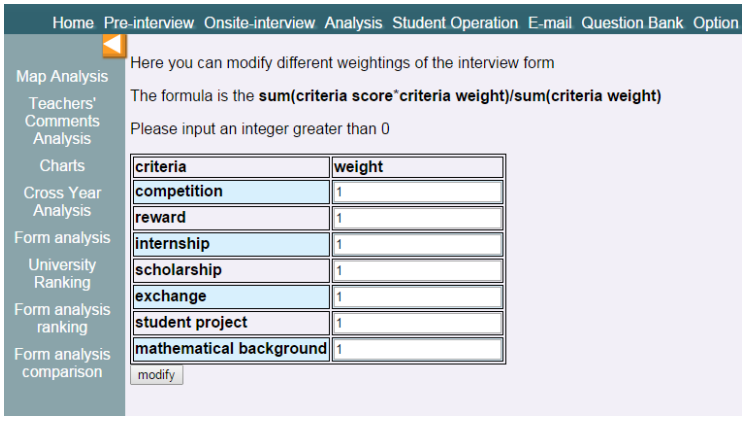
4.3.12 Staff - "Export Student List as CSV"

In "Export CSV", the staff can export a csv file for the current table.


Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
Reference No.:
Show preliminary filtered out applicants
export as xsl
Page: 1 2
Reviewer's Onsite Comment
Conferencing
System Message
This is an alert to all professors.
Student ID | English Name | Gender | Email | Controls
302 | Wilmer B | M | wilmer@b.com
303 | student001 | F | 100s@cs.hku.hk
304 | student002 | F | 200s@cs.hku.hk
305 | s003 | M | s003@cs.hku.hk
306 | s004 | M
307 | s005 | F | s005@cs.hku.hk
308 | s006 | M | s006@cs.hku.hk
309 | s007 | M | s007@cs.hku.hk
310 | s008 | F | s008@cs.hku.hk
311 | s009 | M | s009@cs.hku.hk
312 | s010 | F | s010@cs.hku.hk
313 | s011 | M | s011@cs.hku.hk
314 | s012 | M | s012@cs.hku.hk
315 | s013 | F | s013@cs.hku.hk
316 | s014 | M | s014@cs.hku.hk
play | upload | conferencing | record
col name=Gender
english name=student002
s_id | s_english_n | gender | email
302 | Wilmer B | M | wilmer@b.com
303 | student001 | F | 100s@cs.hku.hk
304 | student002 | F | 200s@cs.hku.hk
305 | s003 | M | s003@cs.hku.hk
306 | s004 | M | s004@cs.hku.hk
307 | s005 | F | s005@cs.hku.hk
308 | s006 | M | s006@cs.hku.hk
309 | s007 | M | s007@cs.hku.hk
310 | s008 | F | s008@cs.hku.hk
311 | s009 | M | s009@cs.hku.hk
312 | s010 | F | s010@cs.hku.hk
313 | s011 | M | s011@cs.hku.hk
314 | s012 | M | s012@cs.hku.hk
315 | s013 | F | s013@cs.hku.hk
316 | s014 | M | s014@cs.hku.hk
346 | s015 | M | s015@cs.hku.hk
347 | s016 | M | s016@cs.hku.hk
349 | s018 | M | s018@cs.hku.hk
350 | s019 | M | s019@cs.hku.hk
351 | s020 | M | s020@cs.hku.hk
352 | s021 | F | s021@sc.hku.hk

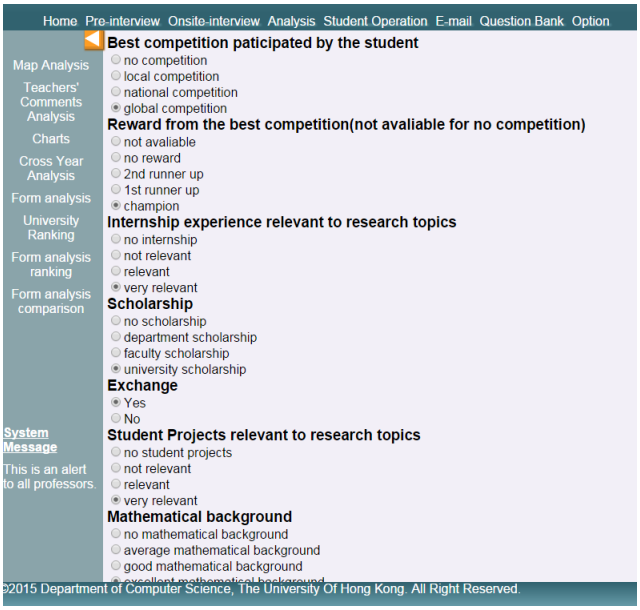
4.3.13 Staff - "Form Analysis" (See APPENDIX IV)

Since we can get a lot of information from onsite interview about students, we design an onsite interview form for reviewers to gather information from students in different criteria such as competition and mathematical background. For each round, reviewers can set the formula of calculating the form score when they want to have different focus. The form score will be calculated by this formula sum(criteria score* criteria rate)/sum(criteria weight).

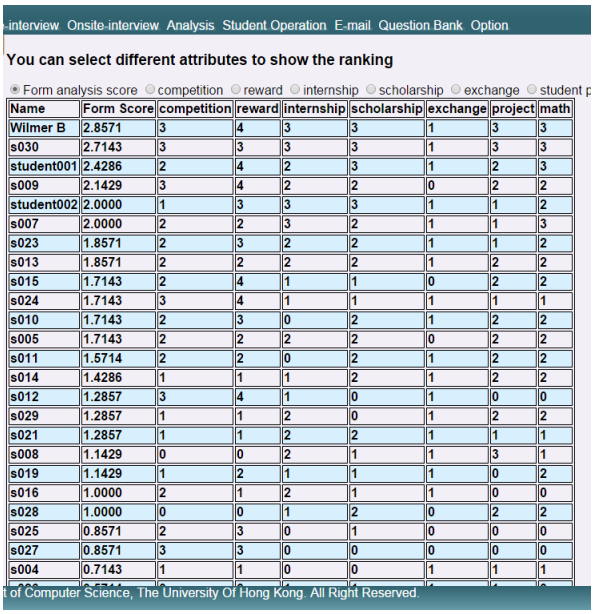


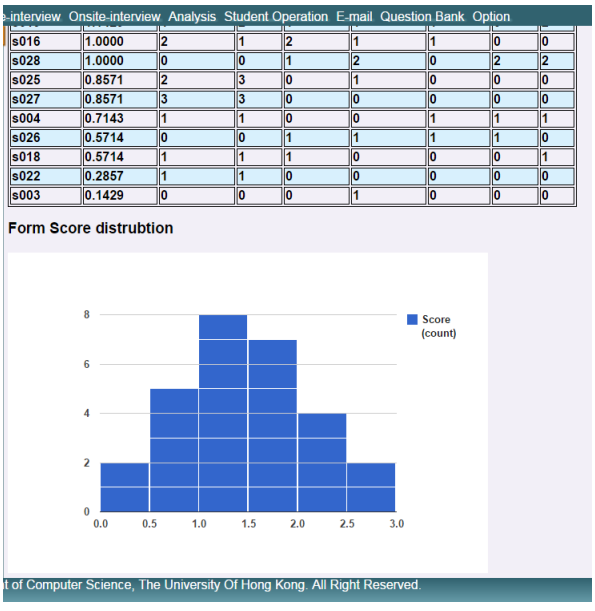
After that, they can input the form for each student. However, reviewers may have different personal scale, i.e. some reviewers prefer to give higher marks and some may prefer to give lower marks. In order to be fair, we design answers to the questions with less bias. For example, performance and participation in competitions, nature of rewards and scholarships as well as participation in exchange are factual characteristics of student applicant with definitive answer.

After inputting all the students' onsite interview form data, reviewers can see different results such as form analysis ranking, form analysis comparison and cross year form analysis.



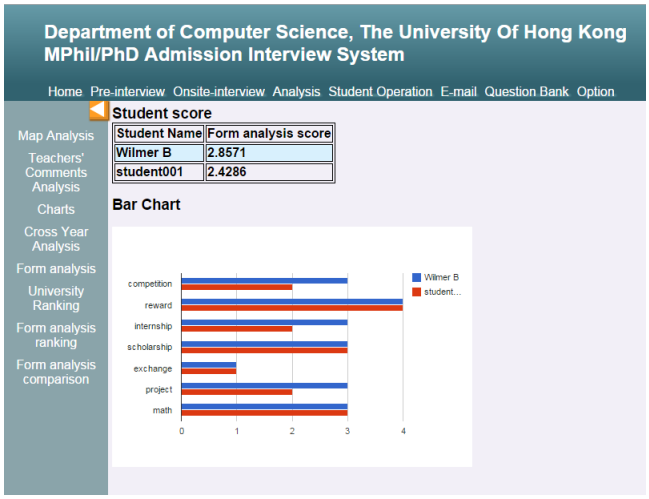
For form analysis ranking, reviewers can see a table of ranking of form score calculated by the formula edited by the reviewers. Also, reviewer can choose different attributes in the form for ranking. Secondly, reviewer can see the distribution of form scores.




-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
s016 | 1.0000 | 2 | 1 | 2 | 1 | 1 | 0 | 0
s028 | 1.0000 | 0 | 0 | 1 | 2 | 0 | 2 | 2
s025 | 0.8571 | 2 | 3 | 0 | 1 | 0 | 0 | 0
s027 | 0.8571 | 3 | 3 | 0 | 0 | 0 | 0 | 0
s004 | 0.7143 | 1 | 1 | 0 | 0 | 1 | 1 | 1
s026 | 0.5714 | 0 | 0 | 1 | 1 | 1 | 1 | 0
s018 | 0.5714 | 1 | 1 | 1 | 0 | 0 | 0 | 1
s022 | 0.2857 | 1 | 1 | 0 | 0 | 0 | 0 | 0
s003 | 0.1429 | 0 | 0 | 0 | 1 | 0 | 0 | 0
Form Score distrubtion
Score (count)
0 2 4 6 8
0.0 0.5 1.0 1.5 2.0 2.5 3.0
t of Computer Science, The University Of Hong Kong. All Right Reserved.

4.3.14 Staff - "Form Comparison" (See APPENDIX V)

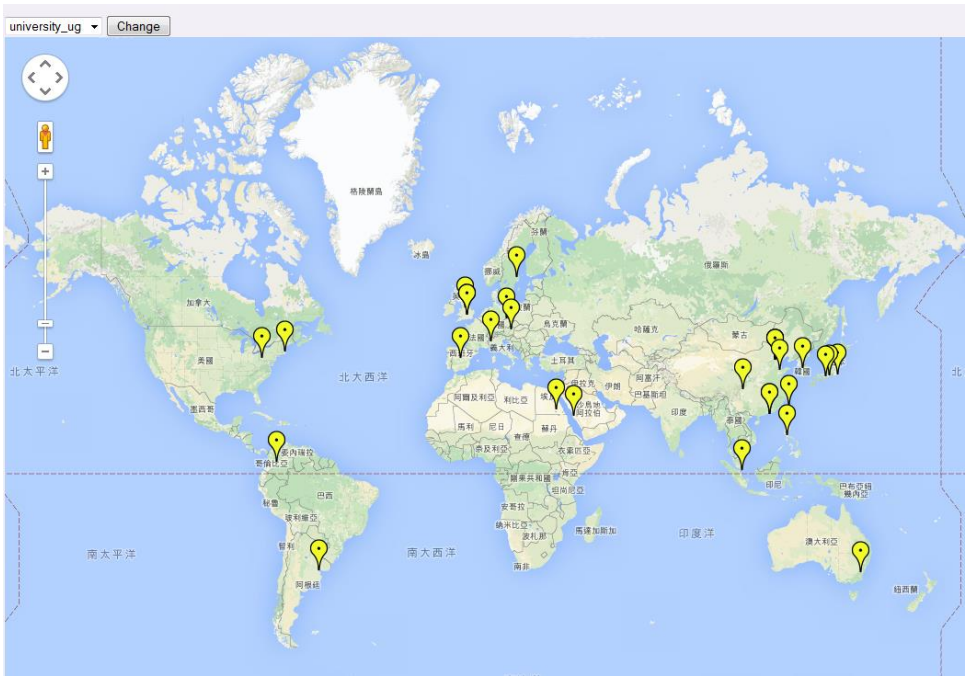
For form analysis comparison, reviewers can choose two students different students to compare them in each criteria.



4.3.15 Staff - "Map Analysis" (See APPENDIX VI)

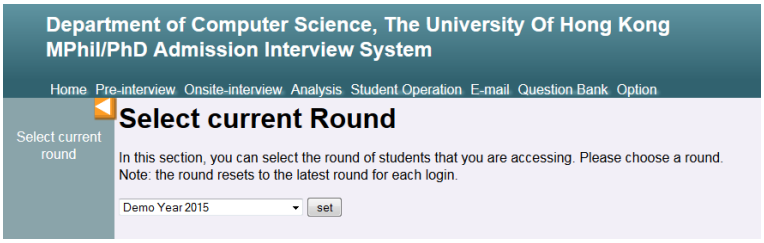
In order to help reviewers to evaluate the current recruitment scheme, we provide map analysis to show the locations of the students' undergraduate and postgraduate universities.

By analyzing the distribution of the universities, the reviewer can know where are most students come from and thus recruitment scheme should further focus on which regions.



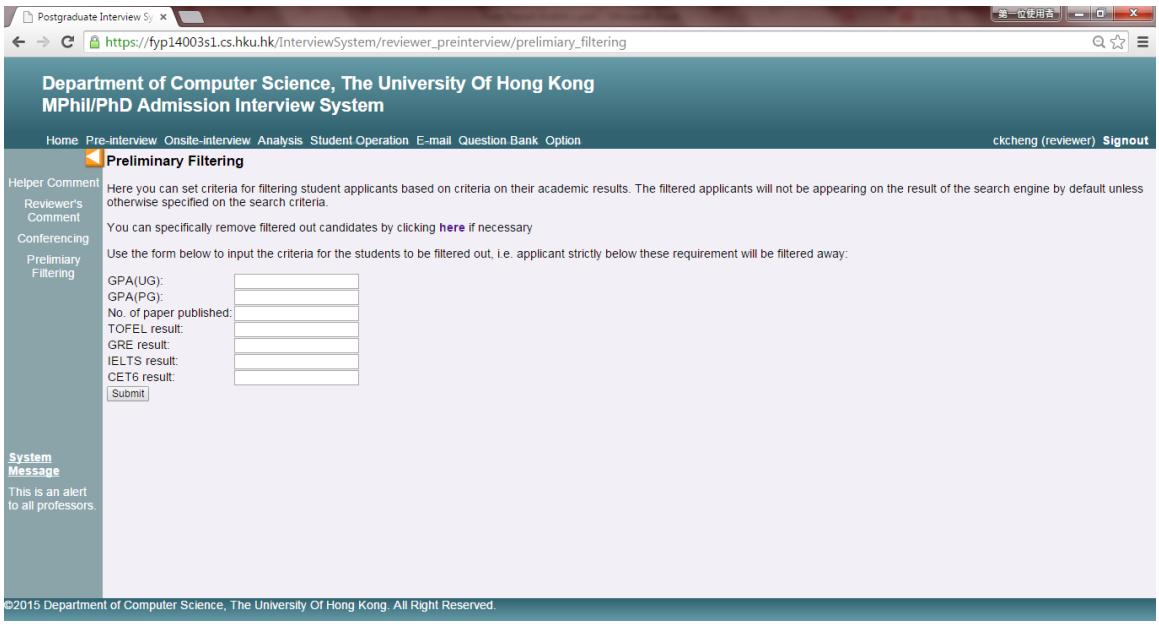
4.3.16 Staff - "Option"

The staff have the privilege to switch between interview rounds which he is responsible for, either to work on current interview round or to look back into analysis data of past rounds.


Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
Select current round
Select current Round
In this section, you can select the round of students that you are accessing. Please choose a round.
Note: the round resets to the latest round for each login.
Demo Year 2015
set

4.3.17 Staff - "Preliminary Filtering" (See APPENDIX VII)

Currently, for the application information submitted by the student applicants, each of them has to be reviewed by helpers and reviewer. Manual selection of the applicant for further chat via Skype or to the onsite interview has to been done. Is there any ways to automatically filter out some of the student which we know they do not satisfy some of our minimum requirement, such that the manual effort could be reduced? This is where the preliminary filtering comes into play.


https://fyp14003s1.cs.hku.hk/InterviewSystem/reviewer_preinterview/prelimiary_filtering
Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
ckcheng (reviewer) Signout
Helper Comment
Reviewer's Comment
Conferencing
Prelimiary Filtering
Preliminary Filtering
Here you can set criteria for filtering student applicants based on criteria on their academic results. The filtered applicants will not be appearing on the result of the search engine by default unless otherwise specified on the search criteria.
You can specifically remove filtered out candidates by clicking here if necessary
Use the form below to input the criteria for the students to be filtered out, i.e. applicant strictly below these requirement will be filtered away:
GPA(UG):
GPA(PG):
No. of paper published:
TOFEL result:
GRE result:
IELTS result:
CET6 result:
Submit
System Message
This is an alert to all professors.
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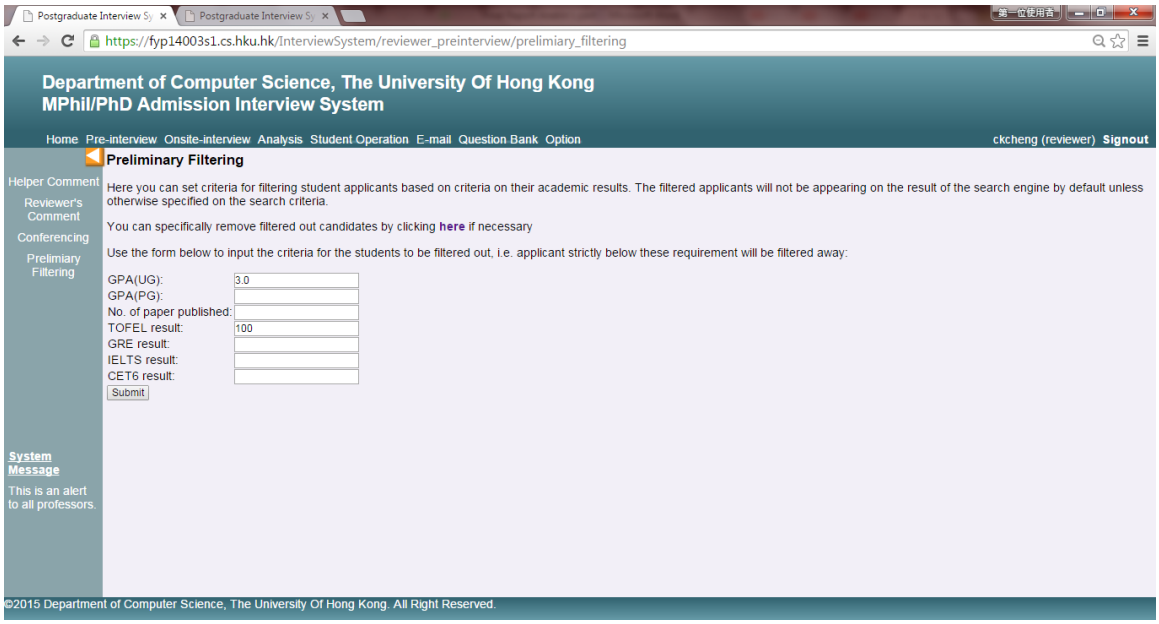
Interface for the Preliminary Filtering

In PIIS, we select attribute of the student application information which are already quantified for comparison including GPA (both undergraduate and postgraduate), number of papers published and also results of 4 public English tests (TOFEL, GRE, IELTS and CET6) as the filtering criteria. In the interface above, the reviewer and helpers can specify the minimum requirement for the criteria. All candidates who do not satisfy the requirement will be filtered out. By default,

they will no longer be appearing on the search engine result on other sections of the system unless otherwise specified by checking the “Show preliminary filtered out applicants” in the search criteria box.


https://fyp14003s1.cs.hku.hk/InterviewSystem/reviewer_preinterview/prelimiary_filtering
Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
ckcheng (reviewer) Signout
Helper Comment
Reviewer's Comment
Conferencing
Prelimiary Filtering
Preliminary Filtering
Here you can set criteria for filtering student applicants based on criteria on their academic results. The filtered applicants will not be appearing on the result of the search engine by default unless otherwise specified on the search criteria.
You can specifically remove filtered out candidates by clicking here if necessary
Use the form below to input the criteria for the students to be filtered out, i.e. applicant strictly below these requirement will be filtered away:
GPA(UG): 3.0
GPA(PG):
No. of paper published:
TOFEL result: 100
GRE result:
IELTS result:
CET6 result:
Submit
System Message
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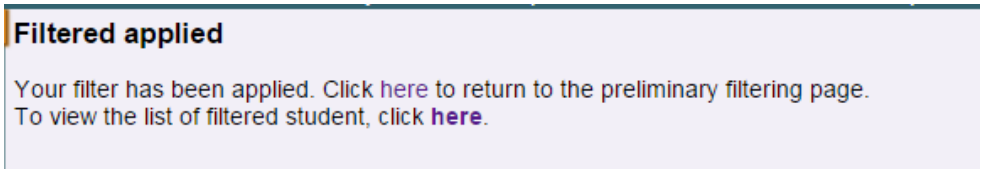
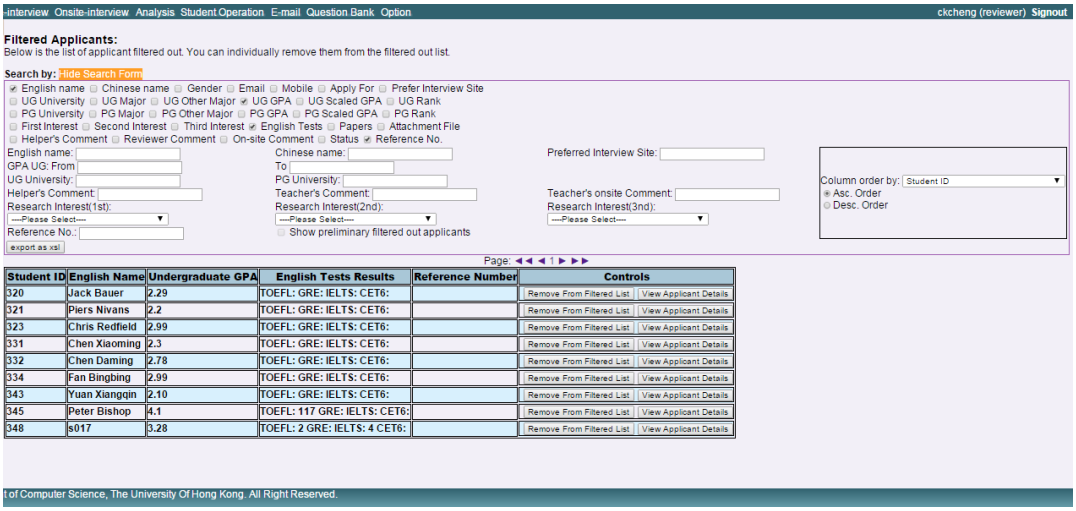
Filtering out of applicants with GPA below 3.5 or TOFEL below 100


Filtered applied
Your filter has been applied. Click here to return to the preliminary filtering page.
To view the list of filtered student, click here.

Success message

View Filtered Student List

Links are provided to the view filtered student page. All filtered student for the round will be displayed.


-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
ckcheng (reviewer) Signout
Filtered Applicants:
Below is the list of applicant filtered out. You can individually remove them from the filtered out list.
Search by: Hide Search Form
English name Chinese name Gender Email Mobile Apply For Prefer Interview Site
UG University UG Major UG Other Major UG GPA UG Scaled GPA UG Rank
PG University PG Major PG Other Major PG GPA PG Scaled GPA PG Rank
First Interest Second Interest Third Interest English Tests Papers Attachment File
Helper's Comment Reviewer Comment On-site Comment Status Reference No.
English name:
Chinese name:
Preferred Interview Site:
GPA UG: From
To
UG University:
PG University:
Helper's Comment:
Teacher's onsite Comment:
Research Interest(1st):
Research Interest(2nd):
Research Interest(3nd):
Reference No.:
Show preliminary filtered out applicants
Column order by: Student ID
Asc. Order
Desc. Order
export as xsl
Page: 1
Student ID English Name Undergraduate GPA English Tests Results Reference Number Controls
320 Jack Bauer 2.29 TOEFL: GRE: IELTS: CET6:
321 Piers Nivans 2.2 TOEFL: GRE: IELTS: CET6:
323 Chris Redfield 2.99 TOEFL: GRE: IELTS: CET6:
331 Chen Xiaoming 2.3 TOEFL: GRE: IELTS: CET6:
332 Chen Daming 2.78 TOEFL: GRE: IELTS: CET6:
334 Fan Bingbing 2.99 TOEFL: GRE: IELTS: CET6:
343 Yuan Xiangqin 2.10 TOEFL: GRE: IELTS: CET6:
345 Peter Bishop 4.1 TOEFL: 117 GRE: IELTS: CET6:
348 s017 3.28 TOEFL: 2 GRE: IELTS: 4 CET6:
Remove From Filtered List
View Applicant Details
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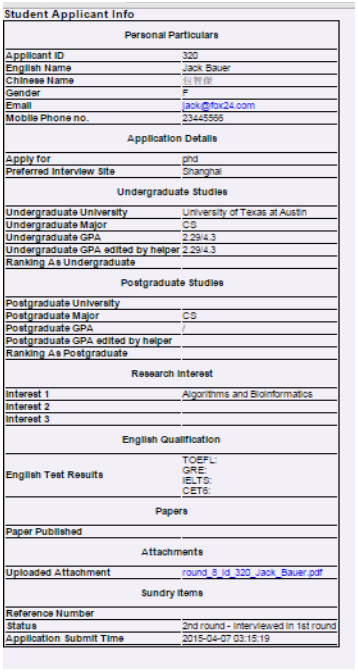
Applicants Matching the Criteria Stated Filtered

Removing Student Applicant from Filtered List

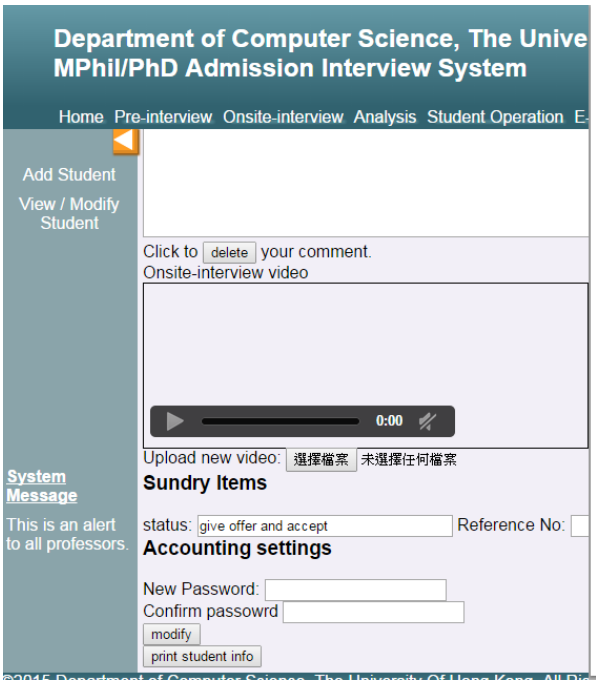
Noting the fact that some filtered candidate may be reconsidered due to excellence in other aspects which are hardly quantified by the filtering criteria, we provide “Remove from Filtered List” button for manual removal of the filtered applicants. Considering the need for reviewing of the candidate profile before reconsideration of the student applicant, “View Applicant Details” button pops up a properly organized table for displaying the student’s portfolio upon a click.

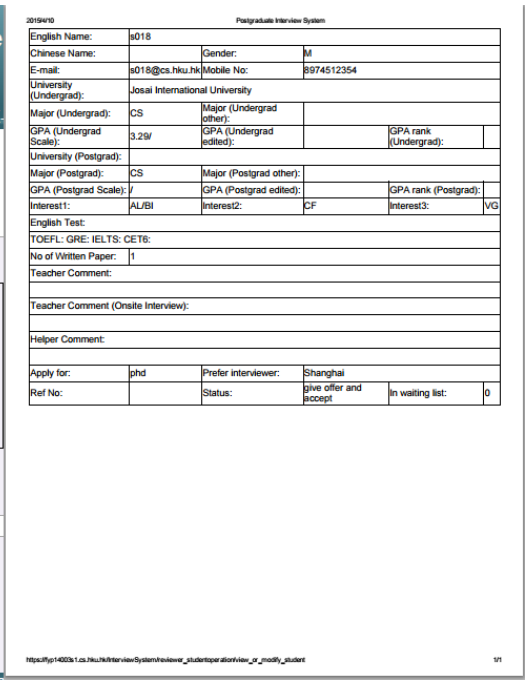
The Student Portfolio after clicking “View Applicant Details” button



4.3.18 Staff - “Printing Applicants’ Info”

In “Printing Applicants’ Info”, the staff can print applicants’ info for further use.





2019/4/10 Postgraduate Interview System

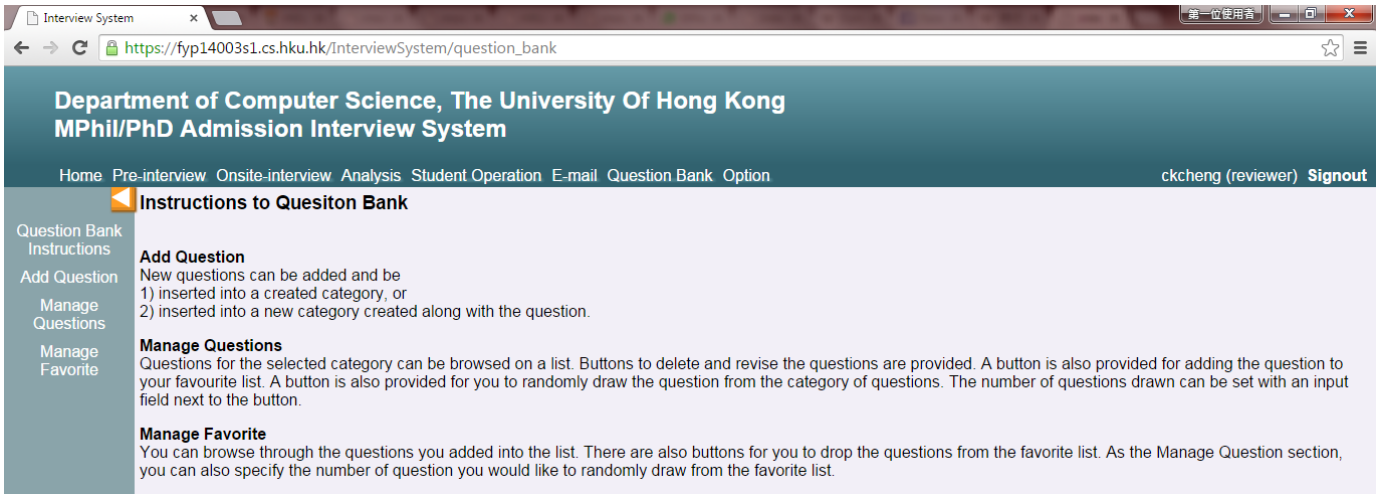
English Name:	s018				
Chinese Name:		Gender:	M		
E-mail:	s018@cs.hku.hk	Mobile No:	8974512354		
University (Undergrad):	Josai International University				
Major (Undergrad):	CS	Major (Undergrad other):			
GPA (Undergrad Scale):	3.29/	GPA (Undergrad edited):		GPA rank (Undergrad):	
University (Postgrad):					
Major (Postgrad):	CS	Major (Postgrad other):			
GPA (Postgrad Scale):	/	GPA (Postgrad edited):		GPA rank (Postgrad):	
Interest1:	AL/BI	Interest2:	CF	Interest3:	VG
English Test:					
TOEFL: GRE: IELTS: CET6:					
No of Written Paper:	1				
Teacher Comment:					
Teacher Comment (Onsite Interview):					
Helper Comment:					
Apply for:	phd	Prefer interviewer:	Shanghai		
Ref No:		Status:	give offer and accept	In waiting list:	0

https://fyp14003s1.cs.hku.hk/InterviewSystem/reviewer_studentoperationview_or_modify_student 1/1

4.3.19 Staff - "Question Bank" (See APPENDIX VIII)

In the context of the postgraduate admission of HKU CS, there are only 6 research interests which the applicants could apply. Interview questions to ask candidates could be very similar. It would be great if a collective question bank could be maintained such that standardized questions could be asked without the interviewers to think of the same questions year after year and candidate after candidate. Not only does the question bank provide smoothing on the interview process, but also allow excellent and challenging questions for interviewees to be built up in the question bank for admission in the future.

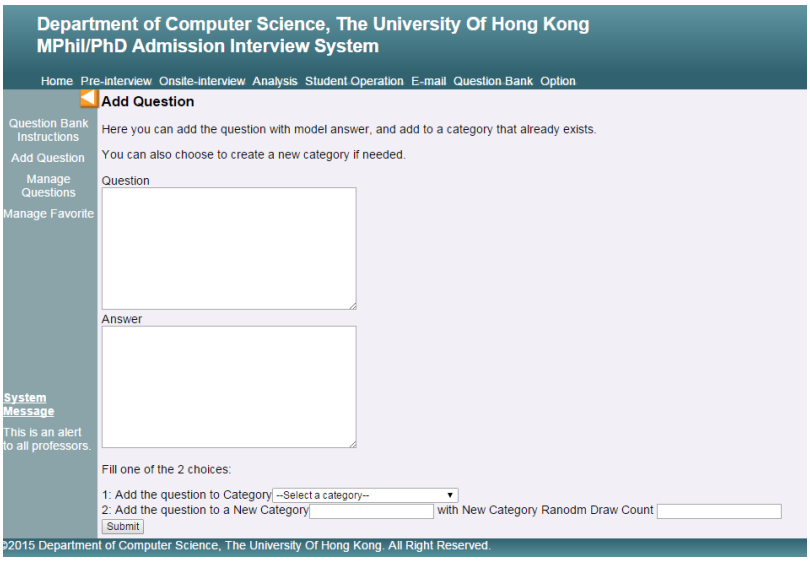
In PIIS, questions are organized into groups called category. Each question belongs to one category while categories could be added or deleted as per the need of the admission. A drawing mechanism is also provided for users to draw a number of questions randomly from a category to allow reviewers to focus on evaluating the interviewee rather than thinking which questions to pick. A favorite list is maintained for each reviewer such that they can bookmark the questions that they find it brilliant to ask. Of course, drawing of questions from favorite list is also provided.


Interview System
https://fyp14003s1.cs.hku.hk/InterviewSystem/question_bank
Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
ckcheng (reviewer) Signout
Question Bank Instructions
Add Question
Manage Questions
Manage Favorite
Instructions to Quesiton Bank
Add Question
New questions can be added and be
1) inserted into a created category, or
2) inserted into a new category created along with the question.
Manage Questions
Questions for the selected category can be browsed on a list. Buttons to delete and revise the questions are provided. A button is also provided for adding the question to your favourite list. A button is also provided for you to randomly draw the question from the category of questions. The number of questions drawn can be set with an input field next to the button.
Manage Favorite
You can browse through the questions you added into the list. There are also buttons for you to drop the questions from the favorite list. As the Manage Question section, you can also specify the number of question you would like to randomly draw from the favorite list.

Instruction Page to the Question Bank

Instruction Page

As shown above, instruction page provide hint to the users who may not have this report or a user manual.


Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
Add Question
Question Bank Instructions
Add Question
Manage Questions
Manage Favorite
Here you can add the question with model answer, and add to a category that already exists.
You can also choose to create a new category if needed.
Question
Answer
System Message
This is an alert to all professors.
Fill one of the 2 choices:
1: Add the question to Category --Select a category--
2: Add the question to a New Category with New Category Ranodm Draw Count
Submit
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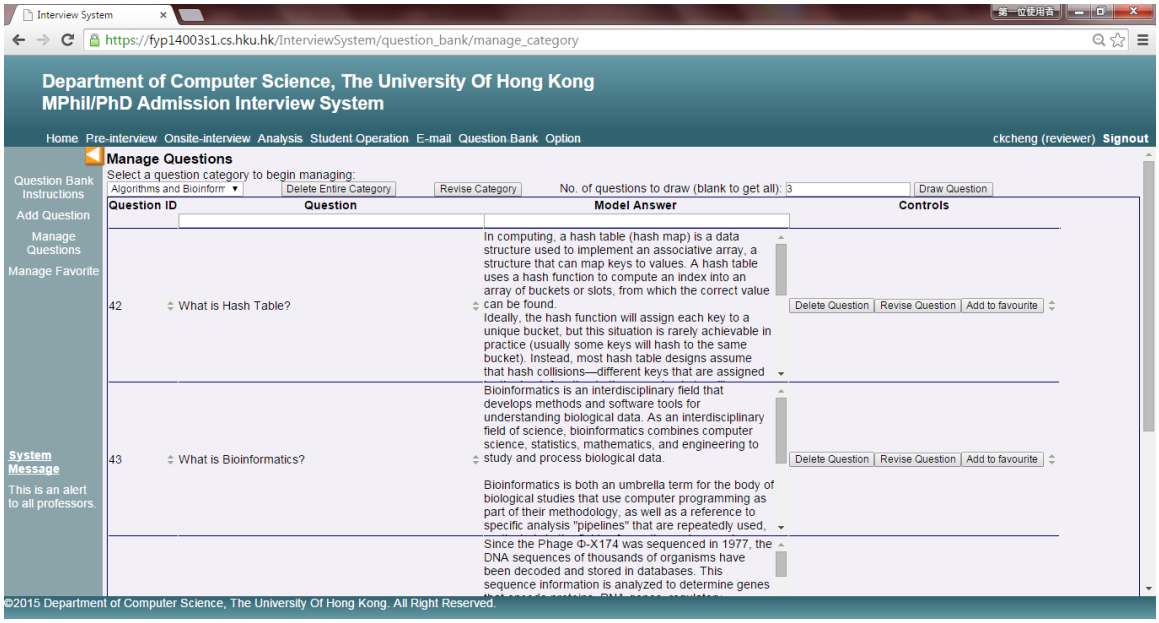
Add question page

Add Question

Interface is given for reviewers and helpers to specify the question for the interviewee in a text area. The new questions could either be added into an existing question category or a new category of specified name and random draw count, which is the default number of question to draw upon selecting that category.


Interview System
https://fyp14003s1.cs.hku.hk/InterviewSystem/question_bank/manage_category
Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
ckcheng (reviewer) Signout
Manage Questions
Select a question category to begin managing:
Delete Entire Category
Revise Category
No. of questions to draw (blank to get all): 3
Draw Question
Question ID
Question
Model Answer
Controls
42
What is Hash Table?
In computing, a hash table (hash map) is a data structure used to implement an associative array, a structure that can map keys to values. A hash table uses a hash function to compute an index into an array of buckets or slots, from which the correct value can be found.
Ideally, the hash function will assign each key to a unique bucket, but this situation is rarely achievable in practice (usually some keys will hash to the same bucket). Instead, most hash table designs assume that hash collisions—different keys that are assigned
Delete Question
Revise Question
Add to favourite
43
What is Bioinformatics?
Bioinformatics is an interdisciplinary field that develops methods and software tools for understanding biological data. As an interdisciplinary field of science, bioinformatics combines computer science, statistics, mathematics, and engineering to study and process biological data.
Bioinformatics is both an umbrella term for the body of biological studies that use computer programming as part of their methodology, as well as a reference to specific analysis "pipelines" that are repeatedly used,
Since the Phage Φ-X174 was sequenced in 1977, the DNA sequences of thousands of organisms have been decoded and stored in databases. This sequence information is analyzed to determine genes
System Message
This is an alert to all professors.
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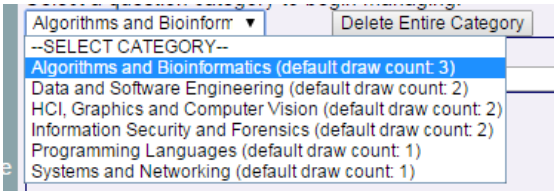
Manage Questions Page

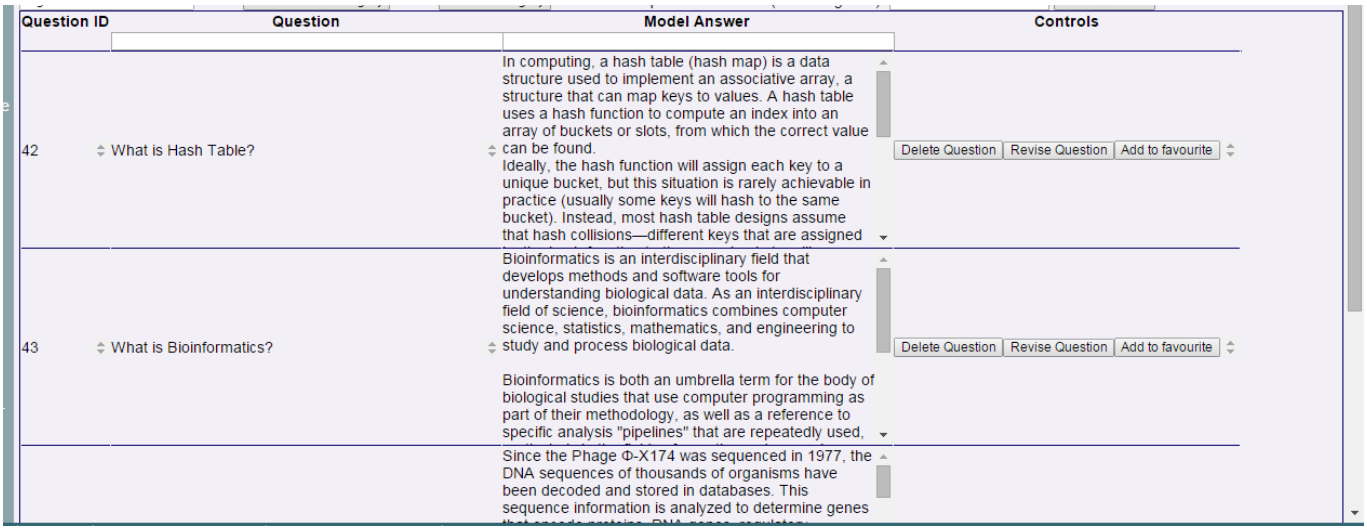
Manage Category

Specific category could be chosen on the left top corner dropdown list for maintenance. Category name and default draw count would be displayed.


Algorithms and Bioinform
Delete Entire Category
--SELECT CATEGORY--
Algorithms and Bioinformatics (default draw count: 3)
Data and Software Engineering (default draw count: 2)
HCI, Graphics and Computer Vision (default draw count: 2)
Information Security and Forensics (default draw count: 2)
Programming Languages (default draw count: 1)
Systems and Networking (default draw count: 1)

Category List

Upon choosing the category, the question list below will show up with the question itself, suggested model answer and also controls for maintaining each of the question. 2 text fields are provided for entering keywords to filter out the questions and answers that users want to seek.


Question ID
Question
Model Answer
Controls
42
What is Hash Table?
In computing, a hash table (hash map) is a data structure used to implement an associative array, a structure that can map keys to values. A hash table uses a hash function to compute an index into an array of buckets or slots, from which the correct value can be found.
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Delete Question
Revise Question
Add to favourite
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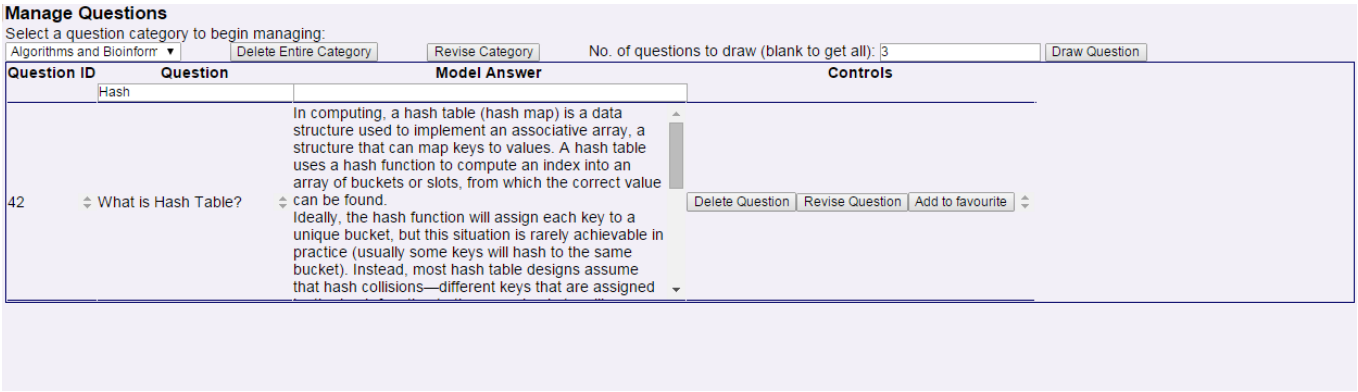
Bioinformatics is both an umbrella term for the body of biological studies that use computer programming as part of their methodology, as well as a reference to specific analysis "pipelines" that are repeatedly used,
Delete Question
Revise Question
Add to favourite
Since the Phage Φ-X174 was sequenced in 1977, the DNA sequences of thousands of organisms have been decoded and stored in databases. This sequence information is analyzed to determine genes

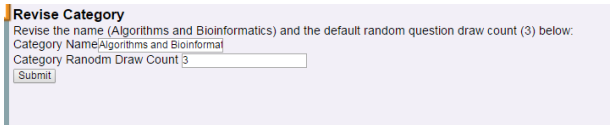

Manage Questions
Select a question category to begin managing:
Algorithms and Bioinform
Delete Entire Category
Revise Category
No. of questions to draw (blank to get all): 3
Draw Question
Question ID
Question
Model Answer
Controls
Hash
42
What is Hash Table?
In computing, a hash table (hash map) is a data structure used to implement an associative array, a structure that can map keys to values. A hash table uses a hash function to compute an index into an array of buckets or slots, from which the correct value can be found.
Ideally, the hash function will assign each key to a unique bucket, but this situation is rarely achievable in practice (usually some keys will hash to the same bucket). Instead, most hash table designs assume that hash collisions—different keys that are assigned
Delete Question
Revise Question
Add to favourite

The Question List for Category Related to Algorithm

The Filtered List with “Hash” as the question keyword, Giving Question Related to Hash Table.

Revise Category

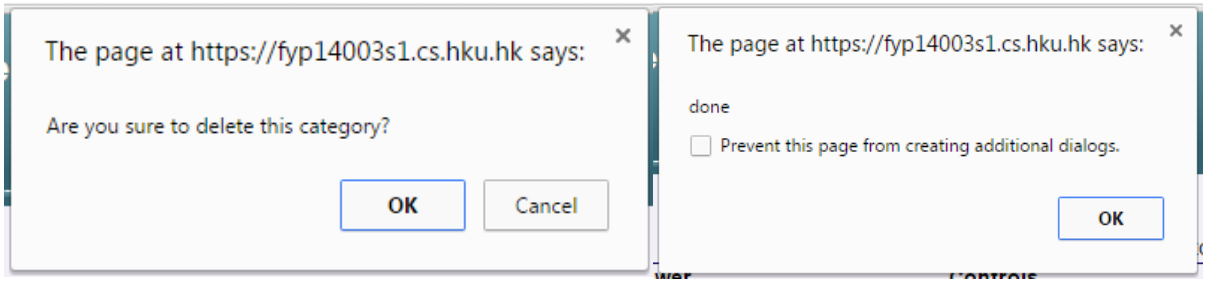
Category name and default draw count can always be revised by clicking revise category button. A form will show up for revising category details.


Revise Category
Revise the name (Algorithms and Bioinformatics) and the default random question draw count (3) below:
Category Name Algorithms and Bioinformat
Category Ranodm Draw Count 3
Submit

Category Revise Form

Delete Category

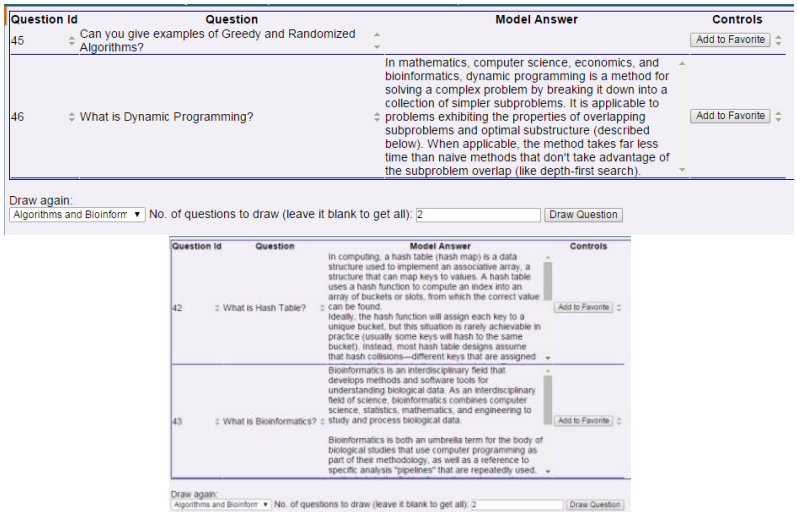
Question category could be deleted by clicking the delete category button, deletion take place after the confirmation.



Confirmation and Successful Message of Category Deletion

Draw Question

There is a draw question section to the top right corner where number of question to draw could be specified and questions could be drawn by clicking the Draw Questions button. Upon selecting a category, the field is automatically switched to the default draw count. Note that an empty field implies selection of all questions within the category.


Question Id
Question
Model Answer
Controls
45
Can you give examples of Greedy and Randomized Algorithms?
Add to Favorite
46
What is Dynamic Programming?
In mathematics, computer science, economics, and bioinformatics, dynamic programming is a method for solving a complex problem by breaking it down into a collection of simpler subproblems. It is applicable to problems exhibiting the properties of overlapping subproblems and optimal substructure (described below). When applicable, the method takes far less time than naive methods that don't take advantage of the subproblem overlap (like depth-first search).
Add to Favorite
Draw again:
Algorithms and Bioinform
No. of questions to draw (leave it blank to get all):
2
Draw Question
42
What is Hash Table?
In computing, a hash table (hash map) is a data structure used to implement an associative array, a structure that can map keys to values. A hash table uses a hash function to compute an index into an array of buckets or slots, from which the correct value can be found.
Ideally, the hash function will assign each key to a unique bucket, but this situation is rarely achievable in practice (usually some keys will hash to the same bucket). Instead, most hash table designs assume that hash collisions—different keys that are assigned
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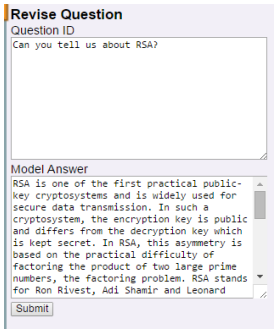
Bioinformatics is an interdisciplinary field that develops methods and software tools for understanding biological data. As an interdisciplinary field of science, bioinformatics combines computer science, statistics, mathematics, and engineering to study and process biological data.
Bioinformatics is both an umbrella term for the body of biological studies that use computer programming as part of their methodology, as well as a reference to specific analysis "pipelines" that are repeatedly used,

Result of Drawing 2 Questions from the Same Category

Of course, if users would like to draw again, same form is provided at the bottom for them to do so. The question drawing box also exists on the conferencing page to provide facility for the reviewer to draw questions for asking during interview.

Question Revision

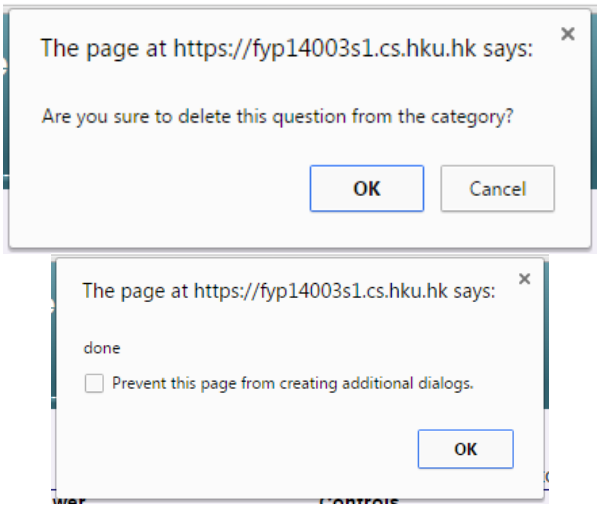
By clicking revise question button next to the question, a form is provided for revising the question details.


Revise Question
Question ID
Can you tell us about RSA?
Model Answer
RSA is one of the first practical public-key cryptosystems and is widely used for secure data transmission. In such a cryptosystem, the encryption key is public and differs from the decryption key which is kept secret. In RSA, this asymmetry is based on the practical difficulty of factoring the product of two large prime numbers, the factoring problem. RSA stands for Ron Rivest, Adi Shamir and Leonard
Submit

Form for Question Revision

Delete Question

Similar to category deletion, confirmation will be prompted, followed by a successful deletion notification.

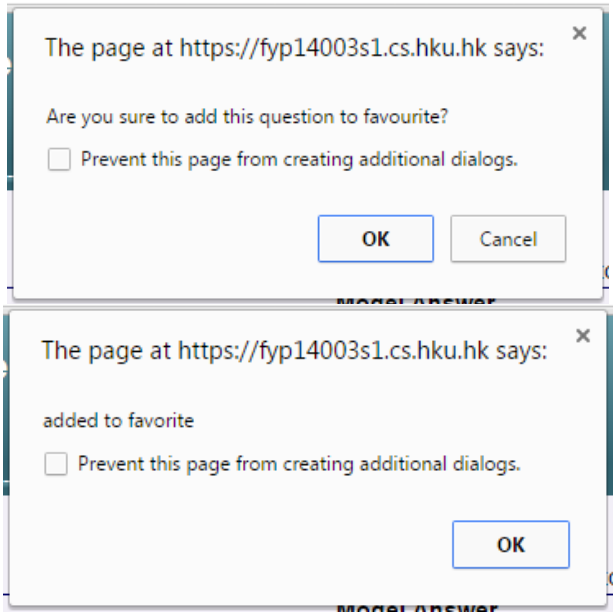


Prompt from Question Deletion

Note that for the categories that do not have questions at all, they will be automatically removed.

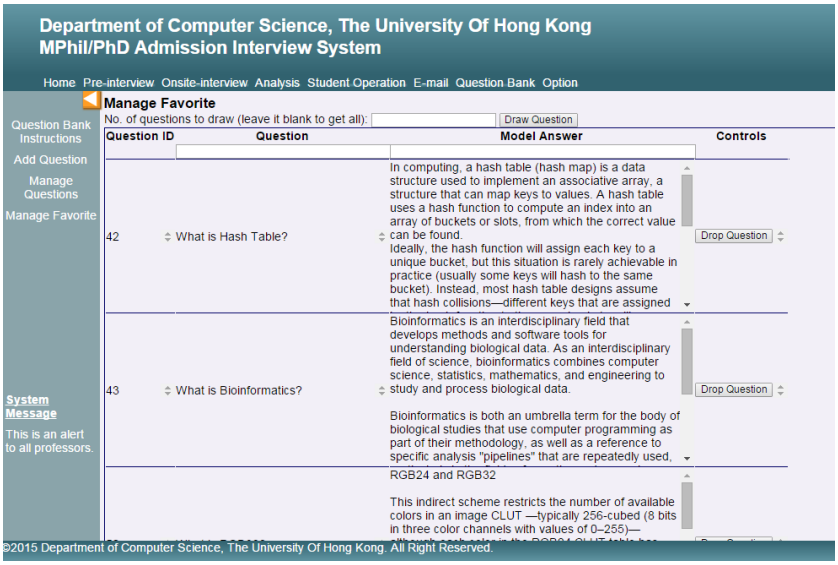
Add to Favorite

Upon reading the questions that reviewers think it is a must to ask, or it is worth the reviewer to bookmark the question, the reviewer can utilize to add to favorite button to add the question to his personal favorite. This button exists on the manage category page and also the resultant list of question after random drawing. Again, confirmation is prompted before adding actually happens.


The page at https://fyp14003s1.cs.hku.hk says:
Are you sure to add this question to favourite?
Prevent this page from creating additional dialogs.
OK
Cancel
The page at https://fyp14003s1.cs.hku.hk says:
added to favorite
Prevent this page from creating additional dialogs.
OK

Prompt from adding favorite.

Manage Favorite


Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
Manage Favorite
Question Bank Instructions
Add Question
Manage Questions
Manage Favorite
System Message
This is an alert to all professors.
No. of questions to draw (leave it blank to get all):
Draw Question
Question ID
Question
Model Answer
Controls
42
What is Hash Table?
In computing, a hash table (hash map) is a data structure used to implement an associative array, a structure that can map keys to values. A hash table uses a hash function to compute an index into an array of buckets or slots, from which the correct value can be found.
Ideally, the hash function will assign each key to a unique bucket, but this situation is rarely achievable in practice (usually some keys will hash to the same bucket). Instead, most hash table designs assume that hash collisions—different keys that are assigned
Drop Question
43
What is Bioinformatics?
Bioinformatics is an interdisciplinary field that develops methods and software tools for understanding biological data. As an interdisciplinary field of science, bioinformatics combines computer science, statistics, mathematics, and engineering to study and process biological data.
Bioinformatics is both an umbrella term for the body of biological studies that use computer programming as part of their methodology, as well as a reference to specific analysis "pipelines" that are repeatedly used,
Drop Question
RGB24 and RGB32
This indirect scheme restricts the number of available colors in an image CLUT —typically 256-cubed (8 bits in three color channels with values of 0–255)—
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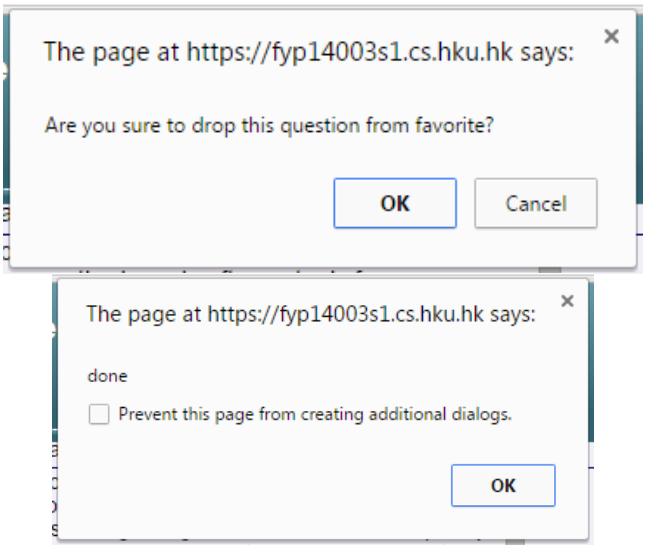
Manage Favorite Page

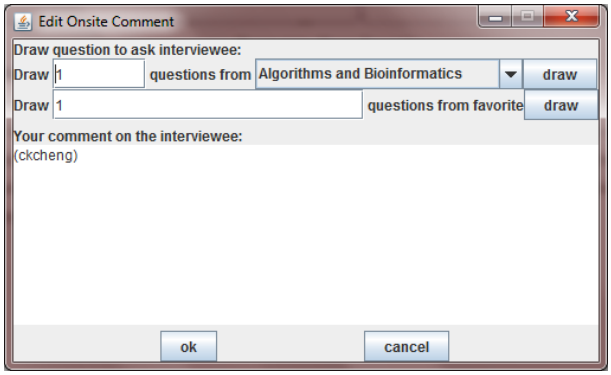
In the managed favorite page, it is designed to be similar to manage category page except that there is no category for choosing, so users who managed to mater the manage category interface should have no problem on the manage favorite page. The draw and filtering questions provided here will work exactly the same. An extra drop favorite button is provided for the reviewers to remove the designated question out of their favorite list.



Prompt to Drop Favorite

Offline Module Support

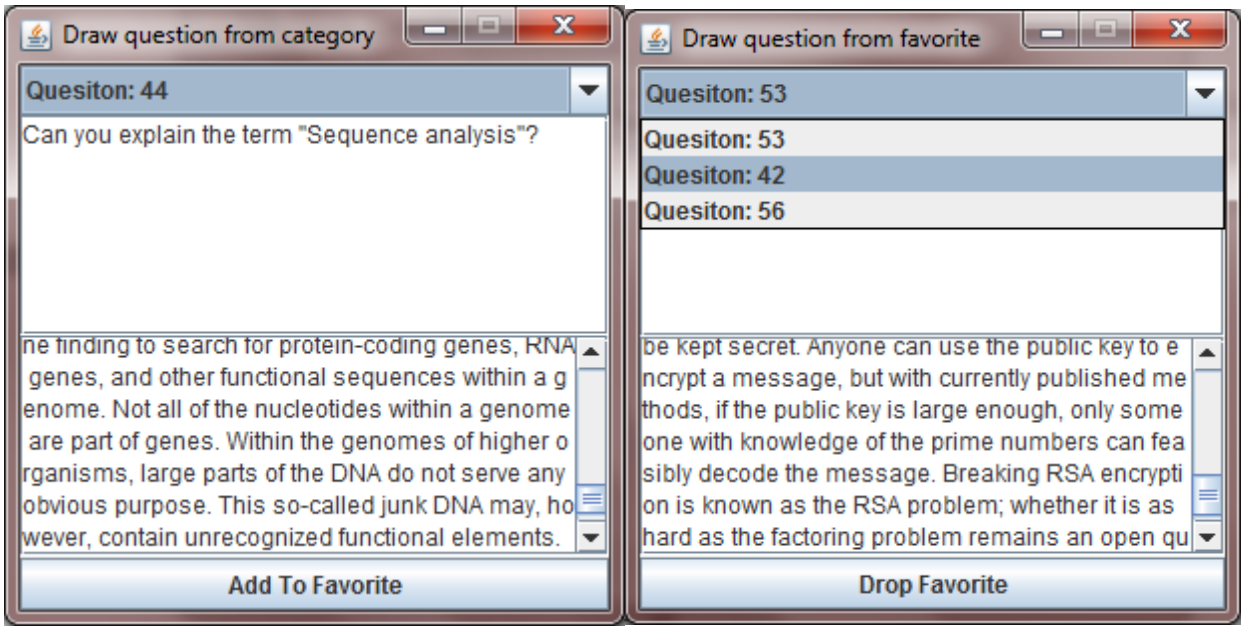
It is the major task for the PIIS to support the poor network environment. This support includes the question bank functionality. The question bank will be downloaded together when the student information is being downloaded (refer to offline module session for details). Considering the need for the interviewer to type in the comments while asking the question, the question drawing functionality will be provided above the text area where the comments are jotted.



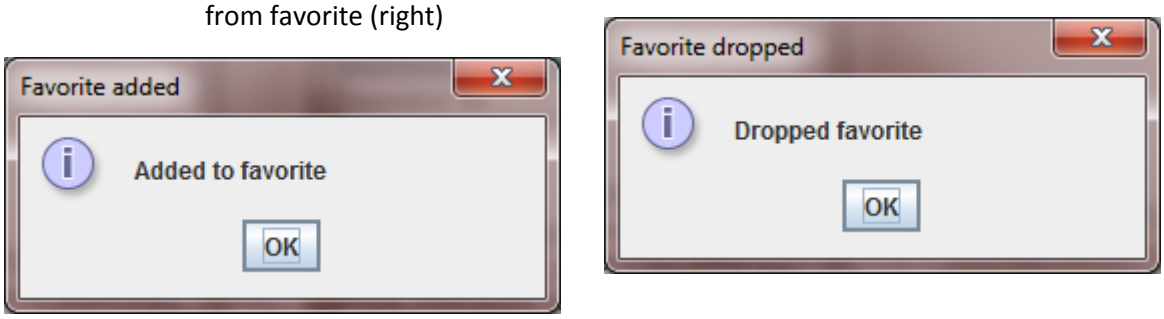
The draw question interface on the onsite comment editing window

Upon specifying the number of questions to draw, a new window will pop up, showing the list of questions drawn in the combo box above, while showing the selected question and model

answer below. At the bottom, there will be add favorite and drop favorite button for drawing from category and favorite respectively.


Draw question from category
Quesiton: 44
Can you explain the term "Sequence analysis"?
ne finding to search for protein-coding genes, RNA genes, and other functional sequences within a g enome. Not all of the nucleotides within a genome are part of genes. Within the genomes of higher o rganisms, large parts of the DNA do not serve any obvious purpose. This so-called junk DNA may, ho wever, contain unrecognized functional elements.
Add To Favorite
Draw question from favorite
Quesiton: 53
Quesiton: 53
Quesiton: 42
Quesiton: 56
be kept secret. Anyone can use the public key to e ncrypt a message, but with currently published me thods, if the public key is large enough, only some one with knowledge of the prime numbers can fea sibly decode the message. Breaking RSA encrypti on is known as the RSA problem; whether it is as hard as the factoring problem remains an open qu
Drop Favorite

Draw questions from category (left) and from favorite (right)

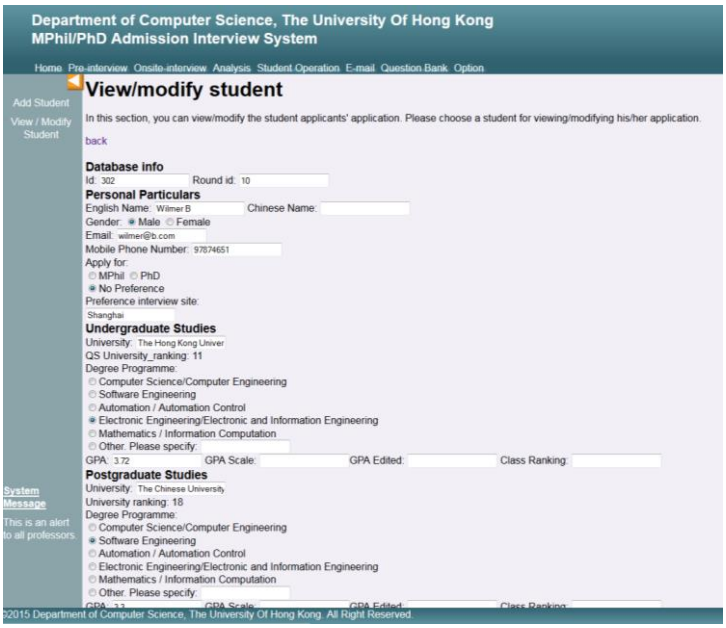


Prompt upon adding or dropping favorite

4.3.20 Staff - "Student Operation"

View / Modify Student's record

The staff have the privilege to view and edit the full record of a student applicant. Intuitively, for some special case like helper's comment will only be modifiable by related user, which is helper in this case.


Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
Add Student
View / Modify Student
View/modify student
In this section, you can view/modify the student applicants' application. Please choose a student for viewing/modifying his/her application.
back
Database info
Id: 302 Round id: 10
Personal Particulars
English Name: Wilmer B Chinese Name:
Gender: Male Female
Email: wilmer@b.com
Mobile Phone Number: 97874651
Apply for:
MPhil PhD
No Preference
Preference interview site:
Shanghai
Undergraduate Studies
University: The Hong Kong Univer
QS University_ranking: 11
Degree Programme:
Computer Science/Computer Engineering
Software Engineering
Automation / Automation Control
Electronic Engineering/Electronic and Information Engineering
Mathematics / Information Computation
Other. Please specify:
GPA: 3.72 GPA Scale: GPA Edited: Class Ranking:
Postgraduate Studies
University: The Chinese University
University ranking: 18
Degree Programme:
Computer Science/Computer Engineering
Software Engineering
Automation / Automation Control
Electronic Engineering/Electronic and Information Engineering
Mathematics / Information Computation
Other. Please specify:
System Message
This is an alert to all professors.
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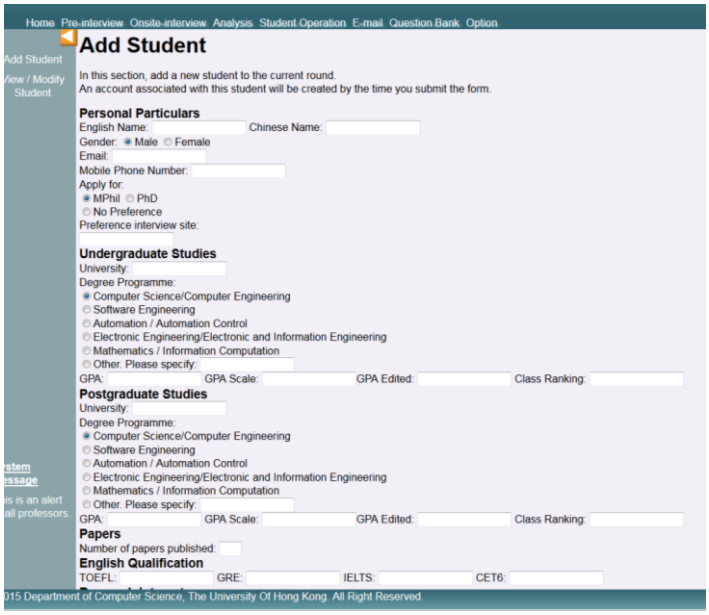
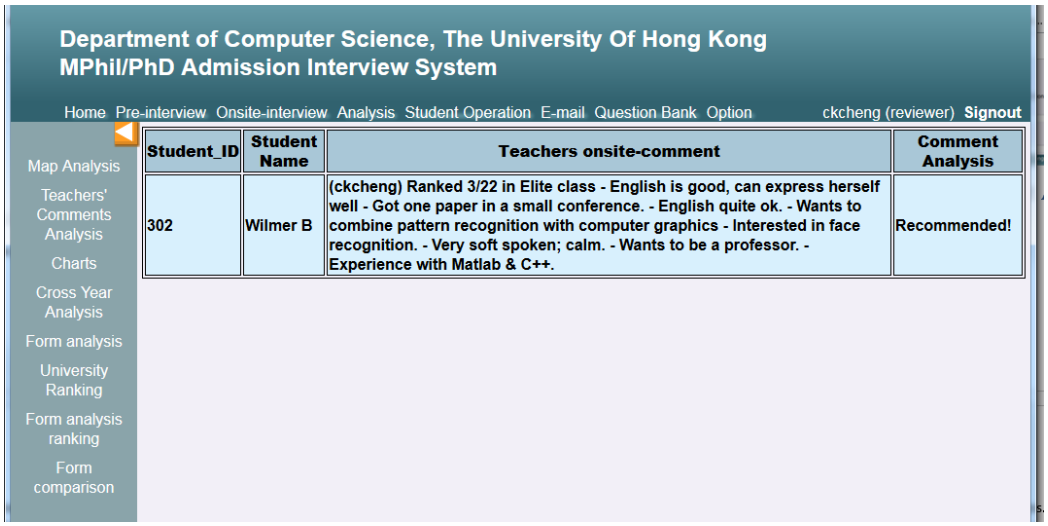
Add New Applicant

Both reviewers and helpers have to privilege to add student applicants manually if applicants apply by means other than online registration.



4.3.21 Staff - “Teachers' Comment Analysis” (See APPENDIX IX)

To find out the elite students from the interview process, we provide a function to analyze reviewers’ onsite comments. Since most of the reviewers give their comments by free text, we apply free text analysis on the comments. After analyze the comments, the system would generate a suggestion on recommending the student or not, which is based on past experience. This can help professor to find out elite students quickly and focus on those students.

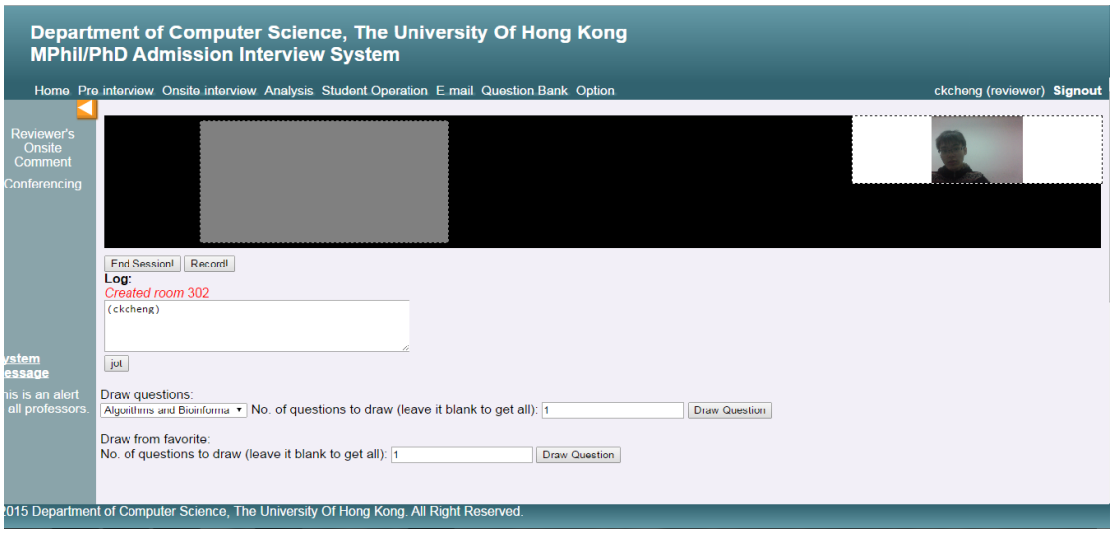

Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
ckcheng (reviewer) Signout
Map Analysis
Teachers' Comments Analysis
Charts
Cross Year Analysis
Form analysis
University Ranking
Form analysis ranking
Form comparison
Student_ID
Student Name
Teachers onsite-comment
Comment Analysis
302
Wilmer B
(ckcheng) Ranked 3/22 in Elite class - English is good, can express herself well - Got one paper in a small conference. - English quite ok. - Wants to combine pattern recognition with computer graphics - Interested in face recognition. - Very soft spoken; calm. - Wants to be a professor. - Experience with Matlab & C++.
Recommended!

4.3.22 Staff - “Video Conferencing” & “Video Recording” (See APPENDIX X & XI)

In “Video Conferencing”, there are two type of conferencing. They are onsite-interview and pre-interview. Pre-interview can start a chat with an interviewee directly. For the interviewers who cannot go to the interview site, they can use the onsite-interview function to have an interview with the interviewees.

The staff can open a room for other reviewer to have a conferencing with interviewee in the interview site. This feature is supposed for some professors who cannot join the interview because they cannot free several days to have a trip to interview site. The interview progress can also be recorded by the interviewing side. WebRTC and RecordRTC are used to achieve this. Below is the user interface of the “conferencing” page.

Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Option
ckchui (reviewer) Signo
Helper Comment
Reviewer's Comment
Conferencing
System Message
This is an alert to all professors.
End Session
Record
upload
©2015 Department of Computer Science, The University Of Hong Kong. All Right Reserved.


Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Question Bank Option
ckcheng (reviewer) Signout
Reviewer's Onsite Comment
Conferencing
End Session
Record
Log:
Created room 302
(ckcheng)
jot
Draw questions:
No. of questions to draw (leave it blank to get all):
Draw Question
Draw from favorite:
No. of questions to draw (leave it blank to get all):
Draw Question
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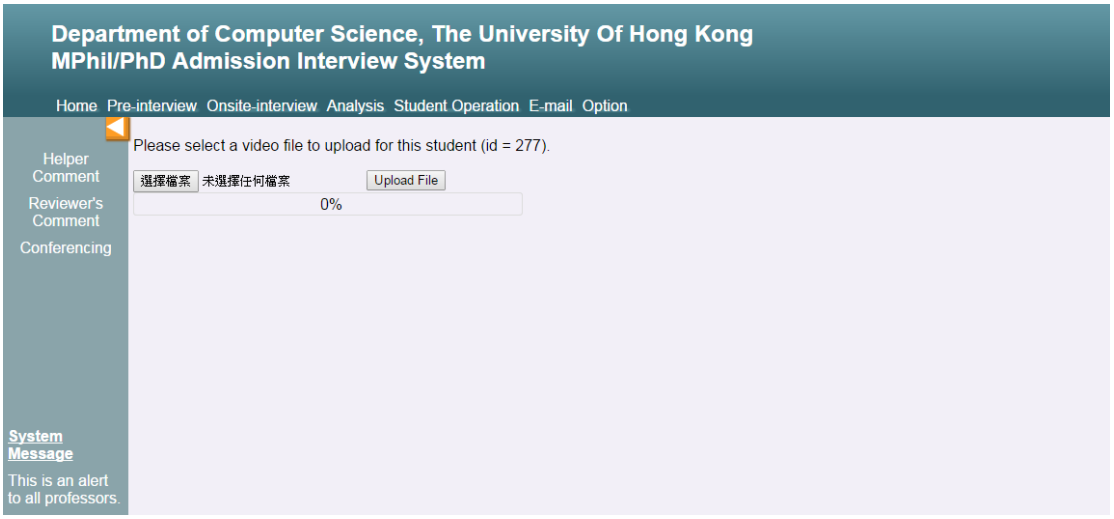
There are two video elements and three buttons. The video element at the right hand corner is the image captured by the local web cam and the one in the middle is the image captured by the other side. The three buttons are “End Session”, “Record” and “upload”. “End Session” can terminate the conferencing. “Record” can start recording the image acquired by the web cam. When “Record” is clicked it will become “Stop”. After the end of interview and clicking “Stop”, “Upload” button will appear. “Upload” can upload the recorded video. “Upload” will disappear after click. This mechanism is design for not confusing the user. With this mechanism, we simplify the interface only to show the currently active functionalities. Also, there is a space for the reviewer to jot notes during the interview and submit to the system directly.

Merge Media Files

In “Merge media files”, the system will merge the sound track and the video files. This function is provided for the chrome user, because chrome can only record the graphics and audio in two separate media files. The sound track and the image of the video are recorded separately in Chrome due to the limitation of the current version of RecordRTC.

4.3.23 Staff - "Video Uploading"

In this section, the staff can upload the interview video for the student which is recorded by a camcorder owned by the department in which the department is currently utilizing during interview process. Below is the user interface of the "upload" page.

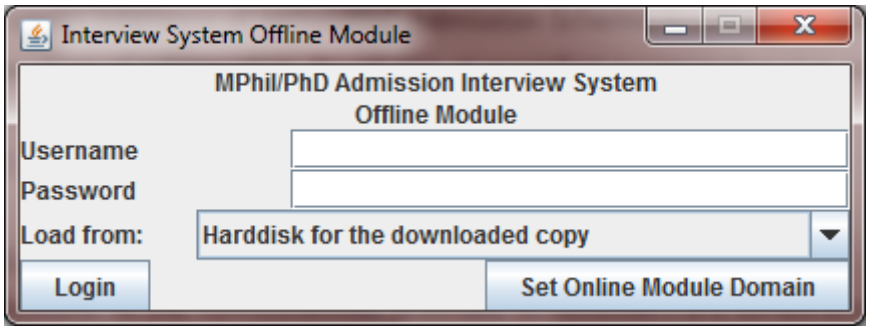

Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Option
Helper Comment
Reviewer's Comment
Conferencing
Please select a video file to upload for this student (id = 277).
選擇檔案 未選擇任何檔案
Upload File
0%
System Message
This is an alert to all professors.

User can choose the video they want to upload and the progress will be shown on the progress bar.

4.3.24 Offline Module (See APPENDIX XII)

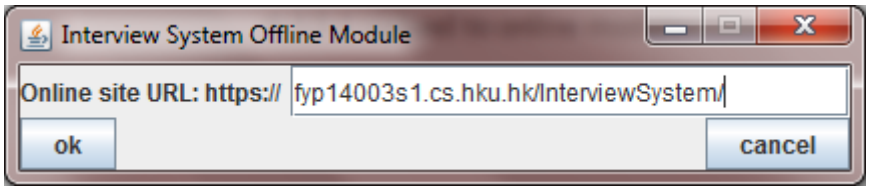
The onsite interview of MPhil/PhD Admission Scheme is rather complex in terms of handling of information. As we aim at providing a comprehensive and user-friendly experience to reviewers.

Login Screen



Upon the execution of the offline module, a login screen is shown. Helpers and reviewers are expected to use the same credentials as the online module to login the offline module. Options ae provided to load student information from the locally downloaded copy, or to initiate downloading process from the online module before starting to use the offline module.

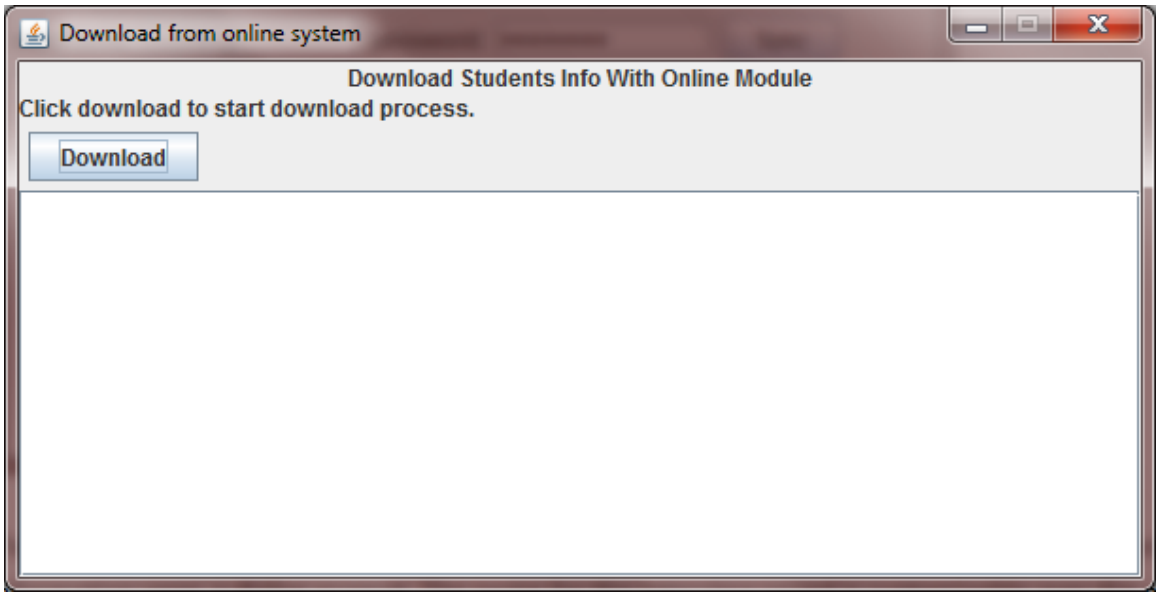
Upon the change in the online module site address, reviewers can modify the URL for online module connection after clicking the “set Online Module Domain” button.



Modify online module URL window

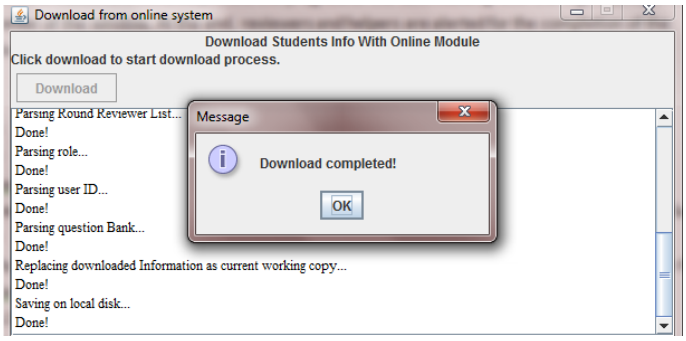
Sync student information from online system

Upon selection of the option to download student applicant information from online system, reviewers or helpers can prepare the copy of the student applicant information for that academic year to be brought to the interview site by clicking the download button.


Download from online system
Download Students Info With Online Module
Click download to start download process.
Download

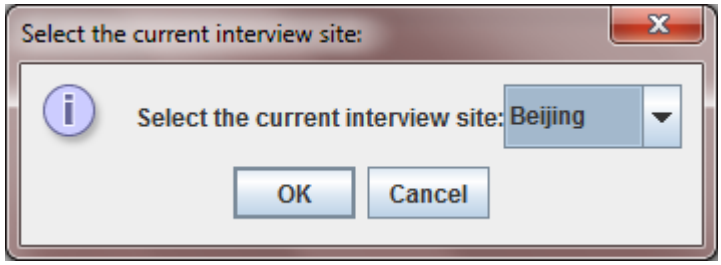
Sync with online module window

The reviewers shall select the desired interview round (academic year) to download the student information upon a dialog prompt. The name for the interview round is customizable over the online module. Reviewers can always trace the progress of the downloading with the logs displayed in the center of the window. At the end, reviewers and helpers are alerted for the completion of the download.



Alert upon completion of downloading

Reviewers or helpers are then prompted to select the current interview site such that a filter to the interviewee list shall be applied and only the interviewee for that site shall be displayed by default.



Prompt for Current Interview Site

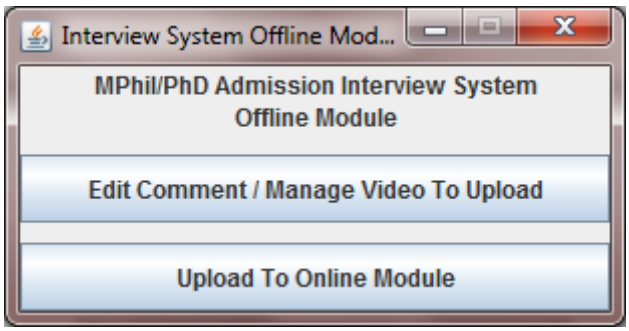
By now, an AES encrypted local copy of the relevant student applicant information is stored on the disk for onsite interview.

Load Local Student Information

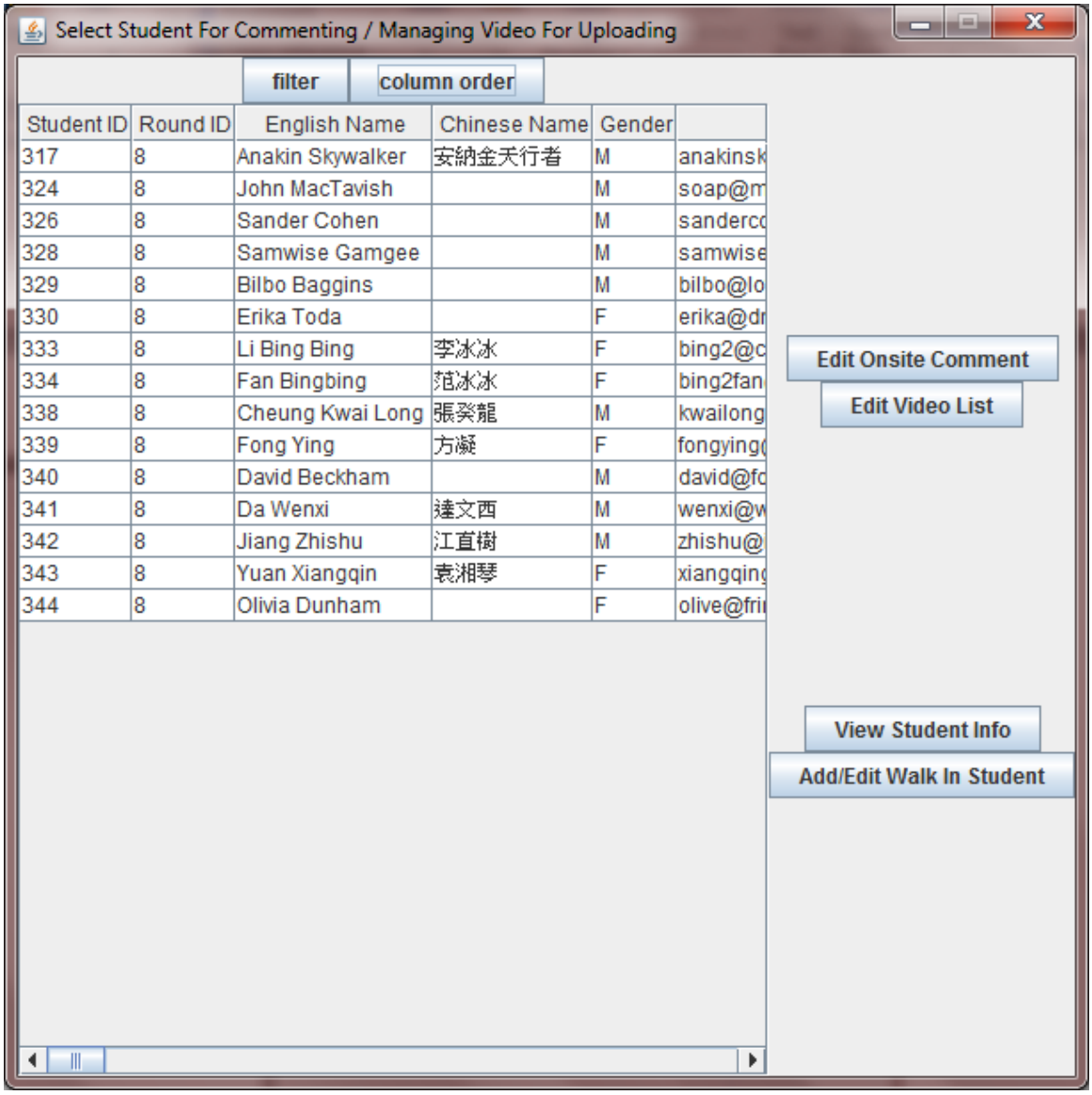
Upon selection to load the student information from local hard disk copy, the records will be loaded in background. A user menu will be shown upon successful loading.

Menu

The offline module consist of 2 major functionality, the functional to edit comment and manage video upload, as well as the function to upload the eidted content to the online module, which are both acessible via the main menu.


Interview System Offline Mod...
MPhil/PhD Admission Interview System
Offline Module
Edit Comment / Manage Video To Upload
Upload To Online Module

Edit Comment / Manage Video to Upload


Select Student For Commenting / Managing Video For Uploading
filter
column order
Student ID
Round ID
English Name
Chinese Name
Gender
317 8 Anakin Skywalker 安納金天行者 M
324 8 John MacTavish M
326 8 Sander Cohen M
328 8 Samwise Gamgee M
329 8 Bilbo Baggins M
330 8 Erika Toda F
333 8 Li Bing Bing 李冰冰 F
334 8 Fan Bingbing 范冰冰 F
338 8 Cheung Kwai Long 張葵龍 M
339 8 Fong Ying 方凝 F
340 8 David Beckham M
341 8 Da Wenxi 達文西 M
342 8 Jiang Zhishu 江直樹 M
343 8 Yuan Xiangqin 袁湘琴 F
344 8 Olivia Dunham F
Edit Onsite Comment
Edit Video List
View Student Info
Add/Edit Walk In Student

Edit Comment / Manage Video to Upload Window

The offline module aims at providing an interface for reviewers and helpers to manage the onsite interview comments and recorded videos given to the interviewee immediately after the interview.

Filtering student applicants' record

The offline module provides a search engine where you can filter out student applicants' record and select the one that you need. Available search criteria includes, but not limited to, English name, Chinese name, preferred interview site, research interests and undergraduate/postgraduate GPA.

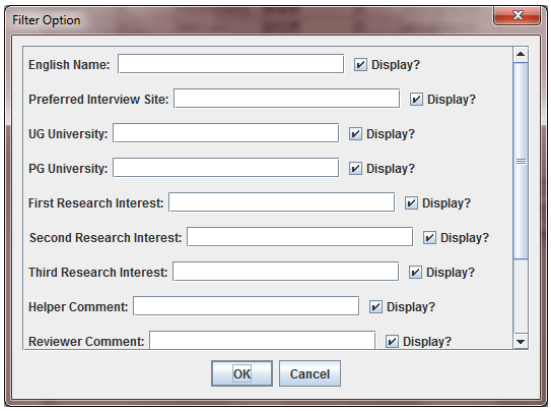
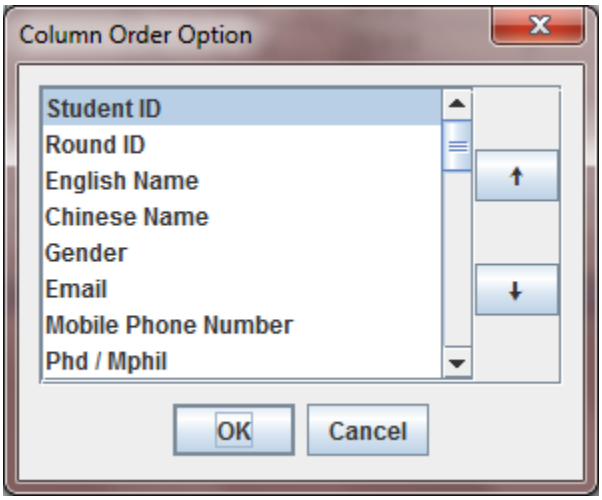


Fig 6.3.4.2 Filter Options

For higher readability of the student applicant table, the columns to be displayed can be customized according to the reviewers' preference. Not only do the display become more organized, but also personalized to fit the users' needs.

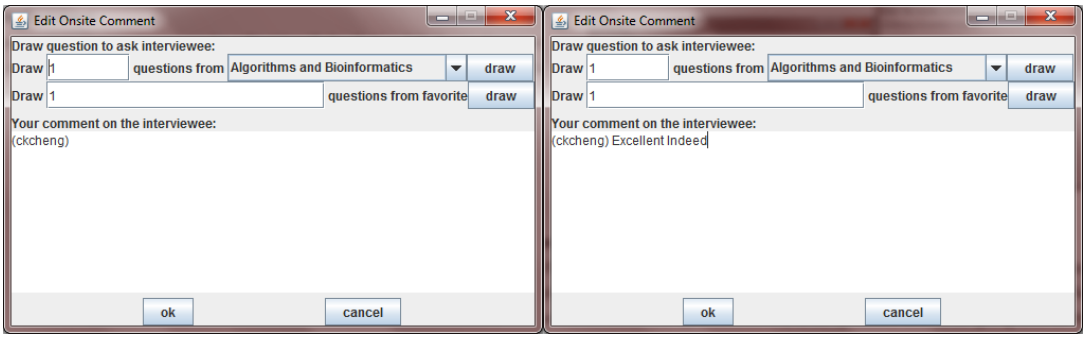
Column Order

For better display of the student applicant table for the reviewers and helpers, Options to customize the table column order is provided.



Edit Onsite Comment

Onsite comment to an interviewee can be edited locally by clicking Edit Onsite Comment button after selecting a student on the table. For interface simplicity, no save button is provided. Changes are saved upon clicking ok button.


Edit Onsite Comment
Draw question to ask interviewee:
Draw 1 questions from Algorithms and Bioinformatics draw
Draw 1 questions from favorite draw
Your comment on the interviewee:
(ckcheng)
ok cancel
Edit Onsite Comment
Draw question to ask interviewee:
Draw 1 questions from Algorithms and Bioinformatics draw
Draw 1 questions from favorite draw
Your comment on the interviewee:
(ckcheng) Excellent Indeed
ok cancel

Editing onsite comment to an interviewee

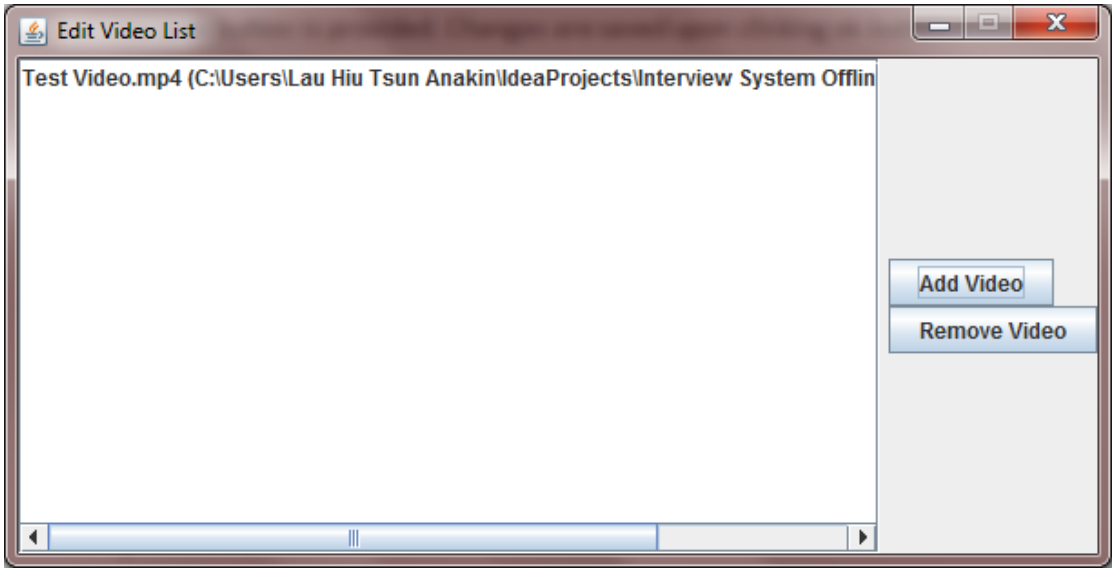
You may have noticed the section for drawing interview questions. Refer to the question bank session for more details.

Edit Onsite Comment

By clicking “Edit Onsite Comment” after selecting a student applicant from the table, the Edit Onsite Comment Window will show up, allowing the reviewers and helpers to edit the onsite comment for the student applicant. For the case of helpers, a dialog box will pop up to ask for the reviewer that the helper is commenting on behalf of. For interface simplicity, no save button is provided. Changes are saved upon clicking ok button.

Edit Video List

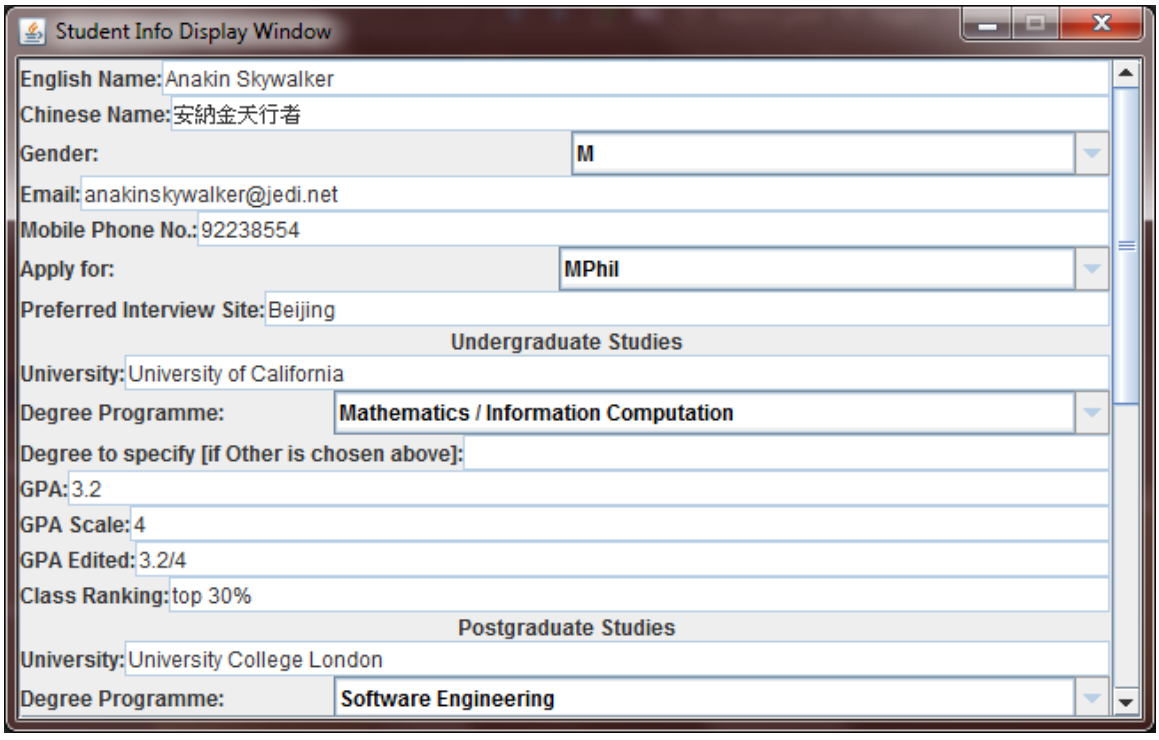
Typically the department uses the newly bought camcorder to record the interview process. There can be multiple video clips for each student applicant interviewee. Reviewers can use this feature to add or remove videos inside the system directory to be uploaded later after going back to Hong Kong from interview site..



6.3.4.3 Editing video list to upload

View Student Information

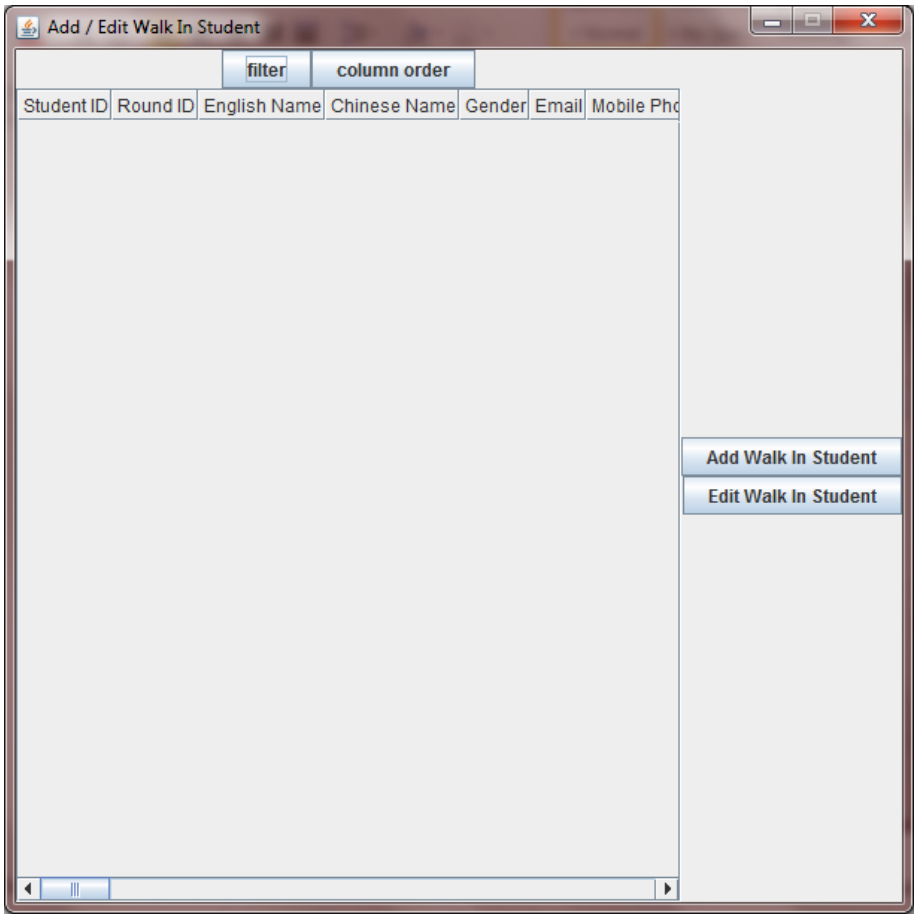
Interface for reviewing student applicants' full record electronically is also provided to lessen the need for messy and clumsy paperwork. A well-organized form is made to display the portfolio for the relevant student applicant.



Viewing student applicants' full record

Add/Edit Walk In Student

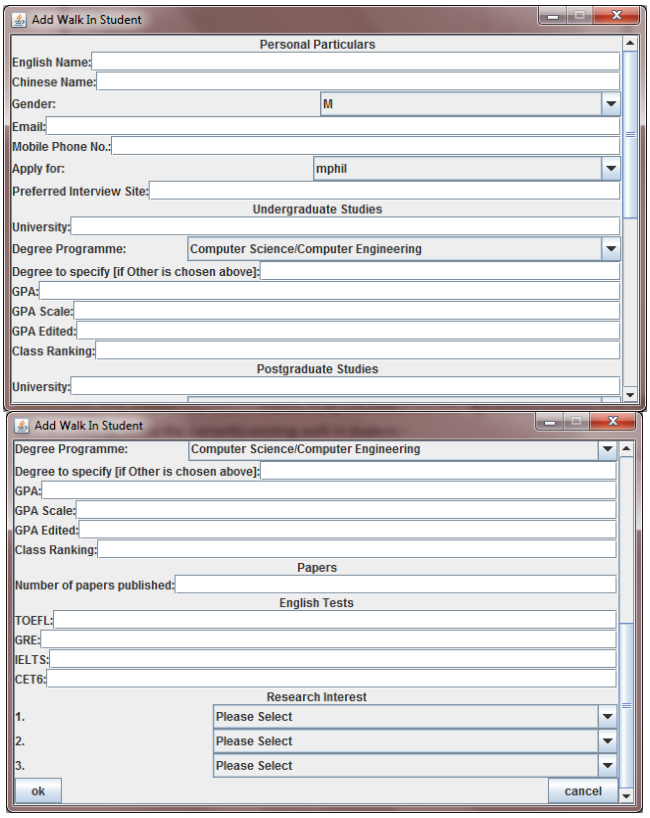
It was stated that there is a need to add new walk in candidate due to, for example, missed student applicant whose record was not inputed into the system before the onsite interview. An interface is provided to add and manage the walk in students.



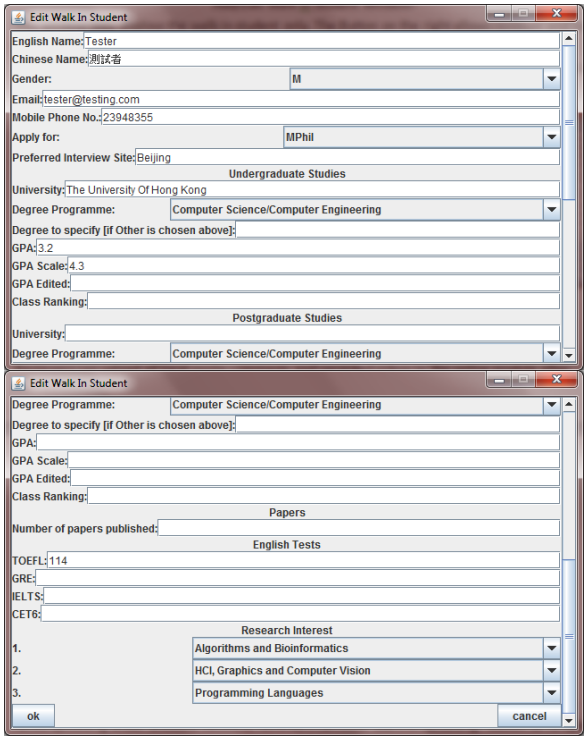
Add/Edit Walk In Student Window

This window only displays the walk-in student only. The Button on the right allows reviewer and helper to add a new or revise the currently existing walk in student.

The form to add or edit the walk-in student is exactly the same as the registration form on the online module. Once completed, click ok to leave the window and save.



Add Walk-in Student Window

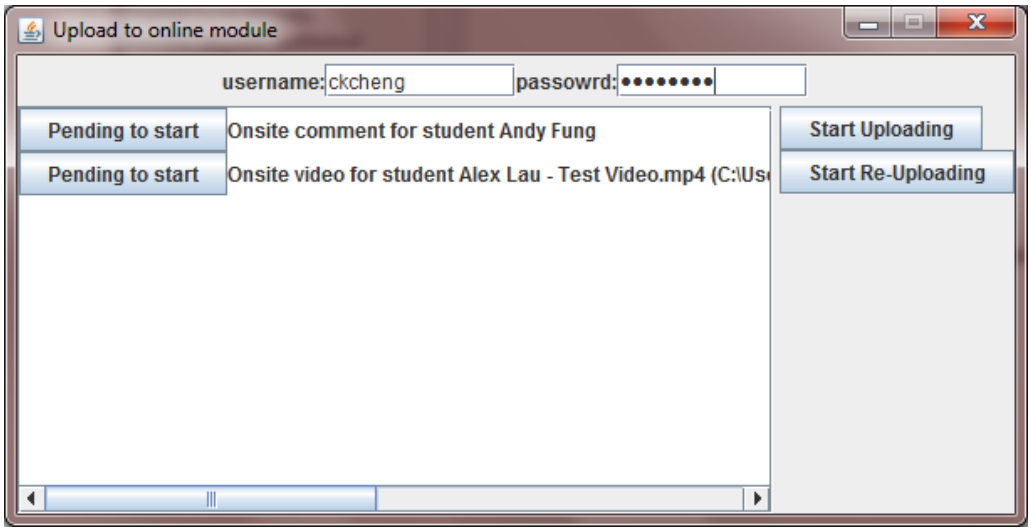


Edit Walk-in Student Window

Once saved, the walk-in student applicant would be added to your student list on the local hard disk copy. Comments and interview video list for the walk in applicant could be edited as other student applicants' record.

Upload to online module

Reviewers and helpers can upload all walk-in student information, local onsite comments and recorded videos to the online module at the end of the onsite interview by clicking "start uploading" button. Upon any failed uploading under unstable network, reviewers can click "start uploading" button again to re-upload the failed items only. Reviewers are notified on the number of success and failed item by dialog box, as well as on the success or failure status of each item in the list on the left. The items which have been successfully uploaded to the online module will not be shown in this window as an upload item next time this window is displayed.



Upload to online module

4.4 Difficulties and Possible Solutions

Developing with CodeIgniter

In the beginning, we chose CodeIgniter as our PHP framework as it provides numerous library and helpers to ease the coding process as well as to give a better code quality. However, as all of us are new to the framework, it takes time to learn and understand before using.

Also, we have little experience in developing a system which will put on production. In result, when we are developing PIIS, we had missed some of the security concerns and possible use cases. Although we finally discovered these mistakes when we are doing testing and quality control, we had spent a lot of time finding out the possible causes and trying to fix them.

The possible solution of this difficulty is to have more research before development, equip ourselves with the sense of efficient coding and learn more about the software development management. And with the experience learnt, we can plan more comprehensively.

Java Keystore and SSL Certificate

To provide security and confidentiality, we tried to use HTTPS when developing PIIS. However, when we are trying to use self-signed SSL certificate for our developing PIIS, problems arose. Self-signed SSL certificate is not considered to be secured to the web browser and JAVA keystore. As the result, offline module and video conferencing failed to work properly in HTTPS. Although the issue is currently resolved by importing the self-signed certificate manually into the JAVA keystore and web browsers, using self-signed certificate could cause security problems if this certificate is stolen by non-trustful users.

The solution is simple actually. If the Department could provide a valid certificate with valid certification path for PIIS in deployment, there will be no need to import self-signed certificate manually which is supposed to be used only during development and hence eliminate the related issues.

Data Mining

In phase one, we had proposed to analysis students' resumes to find out which research interest/group would be most suitable to them. However, due to limited data, we were unable to provide an accurate matching function for the staff and applicants. Other than the limited data, the extraction of data from resumes is a big difficulty because resumes of different applicants have different presentation styles and the resumes in image format also increase the difficulty for extraction of data.

The possible solution we may think of is to gather more resumes in the recruitment scheme and extract data with the help of third party software. After researching, we found that there are several commercial products aiming to convert pictures into words. Hopefully, with the help of these software, we can extract data from the resumes in image format. And with a larger data set, the accuracy on data mining will increase and provide a trustful analysis result.

4.5 Future Development

Mobile Application

Developing a mobile application for PIIS would be a choice for future development. Mobile Apps are important and convenient to people as smart phones are becoming popular. We suggested that the mobile application should serve both applicants and staff.

For staff, they can check the applicants' information and have video conferencing with students through the application. For applicants, they can receive notice and update student information when needed. And it would be great if the application can make use of features of smart phones such as, prompting notification when users receive a PIIS message or even online chatroom.

Data mining in form analysis

Since we expect form analysis can gather large amount of information, the analysis results can allow reviewers to know about students for both academic and non-academic performance. By doing some association with attributes and student status would find out some elite students and which attributes are more important. After knowing which attributes are more important, reviewer can adjust their recruitment scheme in the future. For example, if they find that exchange experience is important, reviewers can ask more question about their exchange in the interview.

Audit Trail

As an information management system, we expect the information in the database would be modified frequently. And to minimize the consequences from abusing users, logging of the database changes would be needed for audit trail. With logging, the Department of Computer Science, HKU can track back every modification done by users and hence increase the security of PIIS.

Erasure of Personal Data

According to the Personal Data (Privacy) Ordinance, Cap. 486, any data that can be defined as 'Personal Data' should be erased where such data are no longer required for the purpose for which they have been used. In our case, at the end of each academic year, when the recruitment is confirmed to be finished, 'Personal Data' collected during the application period should be erased. So as to protect the applicants' privacy, erasure of personal data is suggested to be added into PIIS.

The possible solution to do so is to provide a section for the administrator to erase these data. So that at the end of each academic year, PIIS will notify the administrator to confirm the erasure of personal data. After confirmation, PIIS will erase the related information inside the database.

SECTION 5: Schedule

15th July 2014 – 22nd Sept 2014	Initial planning
22nd Sept 2014– 27th Sept 2014	Preparation of project plan and web page
28th Sept 2014	Project first deliverables: Detailed project plan and project web page
1st Oct 2014 – 31th Dec 2014	Preliminary implementation
1st Jan 2015 – 24th Jan 2015	Preparation of first presentation and interim report
13th Jan 2015	First presentation
25th Jan 2015	Project second deliverables: Preliminary implementation and detailed interim report
28th Jan 2015 – 10th Apr 2015	Further implementation and testing
5th Apr 2015 – 21th Apr 2015	Preparation of final report and presentation
19th Apr 2015	Project third deliverables: Finalized tested implementation and final report
22th Apr 2015	Final presentation
23th Apr 2015 - 3rd May 2015	Preparation of project exhibition
5th May 2015	Project exhibition

SECTION 6: Balance Sheet and Resource Allocation

A maximum of HKD4000, financed the project by the Department of Computer Science, HKU as budget, was spent as below:

Item	Amount (HK$)
Virtual Server	700
	700

REFERENCE

SSL how to import cert to Java Keystore:
http://letmehelpyougeeks.blogspot.hk/2009/07/adding-servers-certificate-to-javas.html

XAMPP: SSL Encrypt the Transmission of Passwords with https:
http://robsnotebook.com/xampp-ssl-encrypt-passwords

How to Create a SSL Certificate on Apache for Ubuntu 14.04:
https://www.digitalocean.com/community/tutorials/how-to-create-a-ssl-certificate-on-apache-for-ubuntu-14-04

Apache HTTP Client: http://hc.apache.org/httpcomponents-client-ga/index.html

Google GSON: https://code.google.com/p/google-gson/

Google Guava: https://code.google.com/p/guava-libraries/

Decorator Pattern: http://en.wikipedia.org/wiki/Decorator_pattern

IntelliJ IDEA: https://www.jetbrains.com/idea/

Google Geolocation API:
https://developers.google.com/maps/documentation/business/geolocation/

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Xindong Wu · Vipin Kumar · J. Ross Quinlan · Joydeep Ghosh · Qiang Yang · Hiroshi Motoda · Geoffrey J. McLachlan · Angus Ng · Bing Liu · Philip S. Yu · Zhi-Hua Zhou · Michael Steinbach · David J. Hand · Dan Steinberg, 4 December 2007, Top 10 algorithms in data mining:
http://www.cs.umd.edu/~samir/498/10Algorithms-08.pdf

Data Mining: http://www.doc.ic.ac.uk/~yg/course/ida2002/ida-2002-2.PPT

Data mining algorithms: Classification:
http://www.cs.ccsu.edu/~markov/ccsu_courses/DataMining-7.html

Imran Khan, Data Mining Basics:
http://mis343dw.wikispaces.com/file/view/IntroductionToDataMining.pdf

Data Mining: Concepts and Techniques, 2nd Ed. The Morgan Kaufmann Series in Data Management Systems, Jim Gray, Series Editor Morgan Kaufmann Publishers, March 2006

WebRTC Signaling Concepts ® Muaz Khan: https://www.webrtc-experiment.com/docs/WebRTC-Signaling-Concepts.html

RecordRTC® Muaz Khan: https://github.com/muaz-khan/WebRTC-Experiment/tree/master/RecordRTC

jQuery Form Plugin: http://malsup.com/jquery/form/

APPENDICES

APPENDIX I: Use Case of "University Ranking"

Use Case Name	Download and update university ranking	
Actor	Reviewer	
Description	Download the current university ranking, modify the university ranking and upload back to system	
Reference		
Typical Course of Events	Actor's action	System response
	Step 1: Initiate the use case when reviewer clicks "Export current university ranking" button in university tanking page.	
		Step 2: Send the university ranking as csv file to reviewer and reviewer starts downloading.
	Step 3: Reviewers open the csv file by Excel and modify the csv file. Step 4: Upload the modified csv file by clicking "Choose File" button and submit to confirm upload.	
		Step 5: System receive the page and refresh the page for the current university ranking.
Alternative Courses	None	
Pre-condition	None	
Post-condition	None	
Assumption	None	

Use Case Name	Charts	
Actor	Reviewer	
Description	Reviewer view varies statistics for all or selected student.	
Reference		
Typical Course of Events	Actor's action	System response
	Step 1: Initiate the use case when reviewer enter "charts" page. Step 3: Reviewers click the second "here" to select students for charts. Step 5: Select students by clicking students on table. Step 6: Click "Submit selected student and refresh chart" button to refresh chart.	Step 2: Display the charts. Step 4: Display the table of students of current round. Step 5: Display refreshed charts with selected students.
Alternative Courses	Step 5: Click "select all on current table" button to select all students form the current table or "select all student satisfying filtering criteria" button to select students satisfying filtering criteria.	
Pre-condition	None	
Post-condition	None	
Assumption	None	

APPENDIX II: Use Case of "Charts"

Use Case Name	Charts - Offer given data	
Actor	Reviewer	
Description	Reviewer view varies statistics with offer given data.	
Reference		
Typical Course of Events	Actor's action	System response
	Step 1: Initiate the use case when reviewer enter "charts" page. Step 3: Reviewers change the fields.	Step 2: Display the charts. Step 4: Display refreshed charts after fields change.
Alternative Courses	None	
Pre-condition	None	
Post-condition	None	
Assumption	None	

APPENDIX III: Use Case of "Cross Year Analysis"

Use Case Name	Cross Year Analysis	
Actor	Reviewer	
Description	This use case describes the process of a reviewer review some statistical result.	
Reference	Analysis-III	
Typical Course of Events	Actor Action	System Response
	Step 1: Initiate the use case when reviewer enters the page of cross year analysis. Step 2: Reviewer chooses a criteria in the drop-down list.	Step 3: Conclude the use case when the system displays the corresponding charts.
Alternative Courses	None	
Pre-condition	None	
Post-condition	None	
Assumption	None	

APPENDIX IV: Use Case of "Form Analysis"

Use Case Name	Form analysis - formula update	
Actor	Reviewer	
Description	Reviewer modify the forma analysis formula for calculating form score.	
Reference		
Typical Course of Events	Actor's action	System response
	Step 1: Initiate the use case when reviewer click "here" in the form analysis page. Step 3: Reviewers change the weighting and click "modify" button.	Step 2: Refresh the page and display the weighting of each criteria for current round. Step 4: Update the formula and display an alert box when update success.
Alternative Courses	Step 4: Display an alert box with error message when update fail.	
Pre-condition	None	
Post-condition	None	
Assumption	None	

Use Case Name	Form analysis - input form	
Actor	Reviewer	
Description	Reviewer modify the form analysis formula for calculating form score.	
Reference		
Typical Course of Events	Actor's action	System response
	Step 1: Initiate the use case when reviewer enter form analysis page.	
		Step 2: Display the students of current round in a table.
	Step 3: Reviewers click a student for inputting the form.	
		Step 4: Display the form of the student.
	Step 5: Modify the form by choosing the radio button and click "modify" button for updating the form.	
		Step 6: Update the form and refresh the page.
Alternative Courses	None	
Pre-condition	None	
Post-condition	None	
Assumption	None	

Use Case Name	Form analysis - ranking	
Actor	Reviewer	
Description	Reviewer view the ranking of students by form analysis	
Reference		
Typical Course of Events	Actor's action	System response
	Step 1: Initiate the use case when reviewer enter form analysis ranking page. Step 3: Reviewers select two students for comparison and click the "submit selected students and see the result" button to see the result.	Step 2: Display the students of current round in a table. Step 4: Refresh the page and display the result.
Alternative Courses	None	
Pre-condition	None	
Post-condition	None	
Assumption	None	

APPENDIX V: Use Case of "Form Comparison"

Use Case Name	Form Comparison	
Actor	Reviewer	
Description	Reviewer compare two students in form analysis.	
Reference		
Typical Course of Events	Actor's action	System response
	Step 1: Initiate the use case when reviewer enter form comparison page. Step 3: Reviewers click a different attribute to show the ranking.	Step 2: Display the students ranking for form score in descending order in a table and the distribution in a histogram. Step 4: Refresh the table and histogram.
Alternative Courses	None	
Pre-condition	None	
Post-condition	None	
Assumption	None	

APPENDIX VI: Use Case of "Map Analysis"

Use Case Name	Map Analysis	
Actor	Reviewer	
Description	This use case describes the process of a reviewer review the locations of the universities.	
Reference	Analysis-II	
Typical Course of Events	Actor Action	System Response
	Step 1: Initiate the use case when reviewer enters the page of map analysis.	Step 2: Display the result on a Google Map after receiving server's responses. Step 3: Conclude the use case when the system displays all the locations.
Alternative Courses	Step 3: Reviewer chooses either postgraduate university for analysis.	Step 4: Conclude the use case when the system displays all the locations.
Pre-condition	None	
Post-condition	None	
Assumption	None	

APPENDIX VII: Use Case of "Preliminary Filtering"

<table>
<tr><td>Use Case Name:</td><td colspan="2">Apply Preliminary Filtering</td></tr>
<tr><td>Actor(s):</td><td colspan="2">Reviewer/Helper</td></tr>
<tr><td>Description:</td><td colspan="2">Apply preliminary filtering to current round of student applicants such that those who is below the specified minimum requirement (undergraduate GPA, postgraduate GPA, number of paper published, as well as public English Test result including TOFEL, GRE, IELTS and CET6) will be filtered out from the result of the search engine throughout the online system.</td></tr>
<tr><td>Reference:</td><td colspan="2">PIIS-021</td></tr>
<tr><td rowspan="2">Typical Course of Events:</td><td>Actor's action</td><td>System response</td></tr>
<tr><td>Step 1: Initiate the use case when actor clicks the preliminary filtering link under Pre-Interview.

Step 3: Enter the filtering criteria on the page. Then click submit.</td><td>Step 2: Display preliminary filtering page.

Step 4: Mark the students below the minimum requirement specified by the filtering criteria as filtered. Conclude the use case by prompting success message.</td></tr>
<tr><td>Alternative Courses:</td><td colspan="2">Step 4: There must be at least 1 field filled for the filtering criteria, if not, error message will be prompted after clicking submit.</td></tr>
<tr><td>Pre-condition</td><td colspan="2">None</td></tr>
<tr><td>Post-condition</td><td colspan="2">Student applicant who has attribute below the stated criteria will be marked as filtered and will not be appearing as the search engine result by default.</td></tr>
<tr><td>Assumption</td><td colspan="2">None</td></tr>
</table>

Use Case Name:	Remove Student Applicant From Filtered Student List	
Actor(s):	Reviewer/Helper	
Description:	Reconsider student applicant who has been filtered by the preliminary filtering mechanism.	
Reference:	PIIS-022	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor clicks the view filtered student link under preliminary filtering of Pre-Interview.	
		Step 2: Display preliminarily filtered student applicants.
	Step 3: Click "View Applicant Details" button.	
		Step 4: Pops up a new window for the full portfolio of the student applicant.
	Step 4: After reconsideration based on the portfolio info, click "Remove From Filtered List" button next to the student applicant to be reconsidered.	
		Step 5: Prompt confirmation on removal of the student applicant from the filtered list.
	Step 6: Confirm to remove the applicant from the filtered list.	
		Step 7: Mark the reconsidered applicant as not filtered. Prompt the actor on successful removal of the student applicant from filtered list. Concluding the use case by refreshing the list of the filtered applicant shown.

Alternative Courses:	Step 4: Conclude the use case if the applicant should not be reconsidered after the reviewing of the student applicants' portfolio. Step 6: Conclude the use case If the actor cancel the action of removing the student applicant from the filtered list.
Pre-condition	None
Post-condition	The selected student for reconsideration will not be filtered out by default on the result of the search engine.
Assumption	None

APPENDIX VIII: Use Case of "Question Bank"

Use Case Name:	Add Question to Question Bank	
Actor(s):	Reviewer/Helper	
Description:	Add a new question to question bank	
Reference:	PIIS-013	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor click Add Question link under the Question Bank. Step 3: Enter the questions, model answer and select a category to add the question to, then click submit.	Step 2: Display Add Question page. Step 4: System prompt adding success and save the question into the question bank to conclude the use case.
Alternative Courses:	Step 3: If a new category name and a default question draw count is specified instead, the system will create a new category with the name and default draw count given, then add the question into the new category in step 4. If any of the question and, either of a selected category or both the new category name and default draw count, is empty, error message will be prompted to conclude the use case.	
Pre-condition	None	
Post-condition	Question is added	
Assumption	None	

Use Case Name:	Delete Question Category from Question Bank	
Actor(s):	Reviewer/Helper	
Description:	Delete question category from question bank	
Reference:	PIIS-014	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor clicks Manage Category link under question bank.	
		Step 2: Display Manage Category Page.
	Step 3: Select a category.	
		Step 4: Show all questions in that category.
	Step 5: Click "Delete Entire Category" button.	
		Step 6: Prompt confirmation on deletion
	Step 7: Confirms deletion by clicking ok.	
		Step 8: Delete the question category and prompt the actor on the success of deletion
Alternative Courses:	Step 5: If no category is selected, use case concludes. Step 7: If cancel button is clicked then the use case concludes.	
Pre-condition	None	
Post-condition	Question Category Deleted	
Assumption	None	

Use Case Name:	Revise Question Category from Question Bank	
Actor(s):	Reviewer/Helper	
Description:	Revise question category name and default draw count in question bank	
Reference:	PIIS-015	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor clicks Manage Category link under question bank.	
		Step 2: Display Manage Category Page.
	Step 3: Select a category.	
		Step 4: Show all questions in that category.
	Step 5: Click "Revise Category" button.	
		Step 6: Display Revise Category page.
	Step 7: Enter the revised category name, default draw count and click submit	
		Step 8: Conclude the sue case by Updating the category with the revised name and default draw count.
Alternative Courses:	Step 5: If no category is selected, use case concludes.	
Pre-condition	None	
Post-condition	Question Category Revised	
Assumption	None	

Use Case Name:	Draw Questions from Question Category	
Actor(s):	Reviewer/Helper	
Description:	Draw specified number of questions from question category	
Reference:	PIIS-016	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor fill the draw count (number of question to draw) on draw question page, video conferencing page or the manage category page and click the draw button.	Step 2: Draw the specified amount of questions, display them on the draw question page to conclude the test case.
Alternative Courses:	Step 2: if the number specified exceeded the number of question in the category, all question in the category will be drawn.	
Pre-condition	None	
Post-condition	Question drawn.	
Assumption	None	

Use Case Name:	Revise Question from Question Bank	
Actor(s):	Reviewer/Helper	
Description:	Revise question and its model answer in question bank	
Reference:	PIIS-017	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor clicks Manage Category link under question bank.	
		Step 2: Display Manage Category Page.
	Step 3: Select a category.	
		Step 4: Show all questions in that category.
	Step 5: Click "Revise question" button next to question that actor want to revise.	
		Step 6: Display modify question page.
	Step 7: Enter the revised question and model answer, and then click submit	
		Step 8: Conclude the sue case by Updating the question with the revised question statement and model answer.
Alternative Courses:	Step 5: If no category is selected, use case concludes.	
Pre-condition	None	
Post-condition	Question Category Revised	
Assumption	None	

Use Case Name:	Delete Question from Question Bank	
Actor(s):	Reviewer/Helper	
Description:	Delete question from question bank	
Reference:	PIIS-018	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor clicks Manage Category link under question bank.	
		Step 2: Display Manage Category Page.
	Step 3: Select the category where the question resides.	
		Step 4: Show all questions in that category.
	Step 5: Click "Delete Question" button.	
		Step 6: Prompt confirmation on deletion
	Step 7: Confirms deletion by clicking ok.	
		Step 8: Delete the question prompt the actor on the success of deletion
Alternative Courses:	Step 5: If no category is selected, use case concludes. Step 7: If cancel button is clicked then the use case concludes.	
Pre-condition	None	
Post-condition	Question Deleted	
Assumption	None	

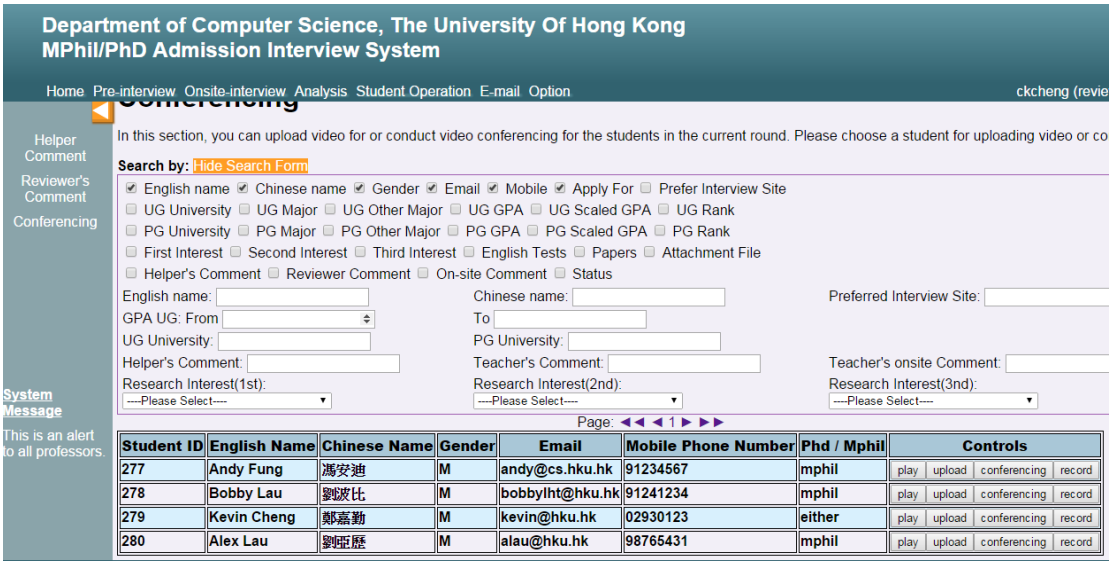
Use Case Name:	Add question to favorite	
Actor(s):	Reviewer/Helper	
Description:	Add a question to favorite list of user	
Reference:	PIIS-019	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor, on draw question page or the manage category page, click the "Add to favorite" button. Step 3: User clicks ok	Step 2: Prompt confirmation on adding the question to favorite list. Step 4: Conclude the use case by saving the question as favorite and prompt the actor on the success on adding to favorite list.
Alternative Courses:	Step 3: Conclude the use case if cancel is clicked	
Pre-condition	None	
Post-condition	Question is added to favorite	
Assumption	None	

Use Case Name:	Draw Questions from Favorite Question	
Actor(s):	Reviewer/Helper	
Description:	Draw specified number of questions from favorite question list for the actor.	
Reference:	PIIS-020	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor, on draw question page, video conferencing page or the manage favorite page, click the draw button.	Step 2: Draw the specified amount of questions, display them on the draw favorite page to conclude the test case.
Alternative Courses:	Step 2: if the number specified exceeded the number of question in the category, all question in the favorite list will be drawn.	
Pre-condition	None	
Post-condition	Favorite question drawn.	
Assumption	None	

APPENDIX IX: Use Case of "Teachers' Comment Analysis"

Use Case Name	Reviewers' Onsite Comment Analysis	
Actor	Reviewer	
Description	This use case describes the process of a reviewer choosing several students to analyze their reviewers' onsite comments.	
Reference	Analysis-I	
Typical Course of Events	Actor Action	System Response
	Step 1: Initiate the use case when reviewer enters the page of reviewers' onsite comment analysis. Step 2: Reviewer click the student for analysis. Step 4: Repeat Step 2 for choosing more than one students. Step 5: Reviewer clicks "analysis" button for analysis.	Step 3: Display the students selected by students' name in a list. Step 6: Conclude the use case when the system generate the result of analysis.
Alternative Courses	Step 2: Reviewer chooses a student in a list and clicks "Clear one student".	Step 3: delete the student chosen from the list.
Pre-condition	None	
Post-condition	None	
Assumption	None	

APPENDIX X: Use Case of "Video Conferencing"


Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Option
ckcheng (revie
Helper Comment
Reviewer's Comment
Conferencing
In this section, you can upload video for or conduct video conferencing for the students in the current round. Please choose a student for uploading video or co
Search by: Hide Search Form
English name Chinese name Gender Email Mobile Apply For Prefer Interview Site
UG University UG Major UG Other Major UG GPA UG Scaled GPA UG Rank
PG University PG Major PG Other Major PG GPA PG Scaled GPA PG Rank
First Interest Second Interest Third Interest English Tests Papers Attachment File
Helper's Comment Reviewer Comment On-site Comment Status
English name:
Chinese name:
Preferred Interview Site:
GPA UG: From
To
UG University:
PG University:
Helper's Comment:
Teacher's Comment:
Teacher's onsite Comment:
Research Interest(1st):
Research Interest(2nd):
Research Interest(3nd):
----Please Select----
Page: 1
System Message
This is an alert to all professors.
Student ID English Name Chinese Name Gender Email Mobile Phone Number Phd / Mphil Controls
277 Andy Fung 馮安迪 M andy@cs.hku.hk 91234567 mphil play upload conferencing record
278 Bobby Lau 劉波比 M bobbylht@hku.hk 91241234 mphil play upload conferencing record
279 Kevin Cheng 鄭嘉勤 M kevin@hku.hk 02930123 either play upload conferencing record
280 Alex Lau 劉亞歷 M alau@hku.hk 98765431 mphil play upload conferencing record

Use Case Name	Onsite Interview	
Actors	Reviewer or helper	
Description	This use case describe the user to open a room for conferencing. On completion, another reviewer or help can join the room and watch the interview live.	
Reference	UI-1	
Typical course of Events	Actor Action	System Response
	Steps 1: Initiate this use case when either a reviewer or helper click conferencing button on one of the student in the onsite interview page.	Steps 2: Use the chose student ID to open a room.
		Steps 3: A dialog box ask for the permission to use web camera and microphone.
	Steps 4: Share the web camera and microphone.	
		Steps 5: The local stream will show on the right hand corner.
	Steps 6: Another reviewer or helper click conferencing button on same student in the onsite interview page.	
		Steps 7: The remote stream

		will show in the middle of the page.
	Steps 8: The “End Session” button clicked.	
		Steps 9: The room close and conferencing break up.
	Steps 10: Conclude this use case.	
Alternative Courses	Steps 6: If no one click conferencing button on same student in the onsite interview page, then jump to step 8.	
Pre-condition	A reviewer not in the interview site want to make an interview with a student.	
Post-condition	None	
Assumption	None	

Use Case Name	Pre-interview Chat	
Actors	Reviewer, helper, student	
Description	This use case describe the user to open a room for conferencing. On completion, student can join the room and have interview.	
Reference	UI-4	
Typical course of Events	Actor Action	System Response
	Steps 1: Initiate this use case when either a reviewer or helper click conferencing button on one of the student in the pre-interview page.	Steps 2: Use the chose student ID and user ID to open a room.
		Step 3: Store the student ID and user ID into database.
		Steps 4: A dialog box ask for the permission to use web camera and microphone.
	Steps 5: Share the web camera and microphone.	
		Steps 6: The local stream will show on the right hand corner.
	Steps 7: Related student click pre-interview.	
		Steps 8: Check if the student

	Steps 10: The “End Session” button clicked. Steps 12: Conclude this use case.	ID exists in the database. Steps 9: The remote stream will show in the middle of the page. Steps 11: The room close and conferencing break up.
Alternative Courses	Steps 7: If no one click conferencing button on same student in the onsite interview page, then jump to step 8. Steps 8: If student ID not exist in database, jump to Step 12.	
Pre-condition	A reviewer or helper want to make an interview with a student.	
Post-condition	None	
Assumption	None	

APPENDIX XI: Use Case of "Video Recording"

Department of Computer Science, The University Of Hong Kong
MPhil/PhD Admission Interview System
Home Pre-interview Onsite-interview Analysis Student Operation E-mail Option
ckchui (reviewer) Signo
Helper Comment
Reviewer's Comment
Conferencing
System Message
This is an alert to all professors.
End Session
Record!
upload!
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Use Case Name	Recording Onsite Interview	
Actors	Reviewer or helper	
Description	This use case describe the user to record an interview. On completion, an "upload" button will be show.	
Reference	UI-2	
Typical course of Events	Actor Action	System Response
	Steps 1: Initiate this use case when either a reviewer or helper click "Record" button in the conferencing page. Steps 3:The "Stop" button was clicked Steps 5: Conclude this use case.	Steps 2: The local stream at the right hand corner will start recording. The "Record" button change to "Stop" button. Steps 4: The "Stop" button change to "Record" button. A "upload" button will appear. The recorded stream's URL will generate.
Alternative Courses	None	
Pre-condition	A reviewer or helper opened a room for the student	
Post-condition	None	
Assumption	None	

Use Case Name	Uploading Onsite Interview Video	
Actors	Reviewer or helper	
Description	This use case describe the user to upload the recorded stream. On completion, the recorded stream will uploaded.	
Reference	UI-3	
Typical course of Events	Actor Action	System Response
	Steps 1: Initiate this use case when either a reviewer or helper click “upload” button in the conferencing page. Steps 3: Conclude this use case.	Steps 2: The recorded stream will upload to server.
Alternative Courses	None	
Pre-condition	A reviewer or helper opened a room for the student and a stream is recorded.	
Post-condition	None	
Assumption	None	

APPENDIX XII: Use Case of "Offline Module"

Use Case Name:	Sync student information from online module	
Actor(s):	Reviewer / Helper	
Description:	Download student applicants' information from online module	
Reference:	PIIS-001	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor entered credentials, clicked login while it is selected to load from online module for onsite interview in the login window.	
		Step 2: Connects to online module with the credentials, upon login successful, display Sync student information window
	Step 3: Actor clicks "sync" button	
		Step 4: Offline module authenticated. Prompt reviewer on overwriting the existing copy.
	Step 5: Actor clicks ok	
		Step 6: Request access to the online module, acquires round information and prompt reviewers for selection.
	Step 7: Actor select a round and click ok	
		Step 8: Request and parse the student applicant information for that round, as well as utility information including question bank and staff list, then save it to local disk. Simultaneously update the progress log.

		Prompt “sync complete” upon completion. Conclude the use case by showing the menu window.
Alternative Courses:	Step 2: Prompt login failure if login fails with the given credentials. Step 4: Abort sync upon incorrect credentials. Step 6: Abort sync upon reviewer clicking no in step 5. Step 8: Abort sync upon no round selected in step 7 or any error in downloading or parsing student information.	
Pre-condition	None	
Post-condition	Login successful and current round of student applicant information is downloaded to local disk.	
Assumption	None	

Use Case Name:	Load Local Student Information	
Actor(s):	Reviewer / Helper	
Description:	Loading downloaded student applicant information from local hard disk	
Reference:	PIIS-002	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when entered credentials, clicked login while it is selected to load from hard disk for downloaded copy in the login window	Step 2: Decrypt with the credential and load the local copy of student applicants' information. Conclude the use case by showing the menu window.
Alternative Courses:	Step 2: Upon incorrect credential, show login failure.	
Pre-condition	None	
Post-condition	Login success and local copy of student applicants' information is loaded.	
Assumption	None	

Use Case Name:	Filtering student applicants' record	
Actor(s):	Reviewer / Helper	
Description:	Filter student applicants' records by actor's search criteria	
Reference:	PIIS-003	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor clicks "filter button" in Edit Comment / Manage Video to Upload window. Step 3: Input the search criteria and customize table columns to display. Then clicks ok.	Step 2: Display Filter Option Dialog Box. Step 4: Conclude the use case by updating the student applicants table.
Alternative Courses:	None	
Pre-condition	None	
Post-condition	Student applicants table updated	
Assumption	None	

Use Case Name:	Edit Onsite Comment	
Actor(s):	Reviewer/Helper	
Description:	Edit reviewer onsite comment on local student applicant information copy	
Reference:	PIIS-004	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor select a student and then clicks "edit onsite comment" in Edit Comment / Manage Video to Upload window Step 3: Edit onsite comment, then clicks ok.	Step 2: Display "Edit Onsite Comment" Window Step 4: Conclude the use case by closing "Edit Onsite Comment" Window and saving the comment to local copy of student applicant information.
Alternative Courses:	Step 2: For helper, a dialog box will display for the helper which reviewer the helper is editing on behalf of, then the helper will choose one, and the system respond by displaying the "Edit Onsite Comment" window. No matter helper or reviewer, display "Nothing selected" if no student applicant is selected. Step 4: Conclude the use case by closing "Edit Onsite Comment" Window without saving if cancel is clicked.	
Pre-condition	Student applicants' information is loaded.	
Post-condition	Onsite comment edited	
Assumption	None	

Use Case Name:	Edit Video List	
Actor(s):	Reviewer/Helper	
Description:	Edit onsite video to be uploaded for a student applicant on local student applicant information copy	
Reference:	PIIS-005	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor select a student and then clicks "Edit Video List" in Edit Comment / Manage Video to Upload window	
		Step 2: Display "Edit Video List" Window
	Step 3: Click Add, then choose a file with a file chooser. Then click ok.	
		Step 4: Update the list showing the selected video files and save the video path to local copy of student applicant information.
	Step 5: Actor Click close button of the "Edit Onsite Comment" Window	
		Step 4: Conclude the use case by closing "Edit Onsite Comment" Window.
Alternative Courses:	Step 2: Display "Nothing selected" if no student applicant is selected. Step 4: Close the file chooser if cancel is clicked in step 3. Remove selected video in the list if a video is select in the list then followed by clicking remove video in step 3.	
Pre-condition	Student applicants' information is loaded.	
Post-condition	Onsite video list for the student applicant edited	
Assumption	None	

Use Case Name:	View Student Information	
Actor(s):	Reviewer / Helper	
Description:	View student applicant's information in local student applicant information copy	
Reference:	PIIS-006	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor select a student and then clicks "View Student Info" in Edit Comment / Manage Video to Upload window	Step 2: Display "View Student Info" Window, with student's registration record and related comments displayed.
Alternative Courses:	Step 2: Display "Nothing selected" if no student applicant is selected.	
Pre-condition	Student applicants' information is loaded.	
Post-condition	Student applicant information displayed to reviewer	
Assumption	None	

Use Case Name:	Upload To Online Module	
Actor(s):	Reviewer / Helper	
Description:	Upload locally edited onsite comment and recorded interview video to online module	
Reference:	PIIS-007	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when reviewer select a student and then clicks "Upload To Online Module" in menu window	
		Step 2: Display "Upload To Online Module" Window, with upload items including new walk-in student information, comment and video which has not been uploaded before shown.
	Step 3: Click "start uploading"	
		Step 4: Upload each walk-in student information, comment and video to online system while updating the status of each item. Conclude the use case by prompting the reviewer on number of success and failed items.
Alternative Courses:	Step 4: Upon any failed items, reviewer click "start uploading" button again, and then the system upload the failed upload items once again. Conclude the use case by prompting the reviewer on number of success and failed items.	
Pre-condition	Student applicants' information is loaded.	
Post-condition	All onsite comments and recorded videos are uploaded	
Assumption	None	

Use Case Name:	Reordering columns of student applicants' record shown on table	
Actor(s):	Reviewer / Helper	
Description:	Reordering attributes of student applicants' records by actor's customized ordering	
Reference:	PIIS-008	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor clicks "column order" button in Edit Comment / Manage Video to Upload window. Step 3: Customize column order by selecting a column and then move it up and down by up and down buttons. Then clicks ok.	Step 2: Display Column Order Option Dialog Box. Step 4: Conclude the use case by updating the student applicants table.
Alternative Courses:	None	
Pre-condition	None	
Post-condition	Student applicants table updated	
Assumption	None	

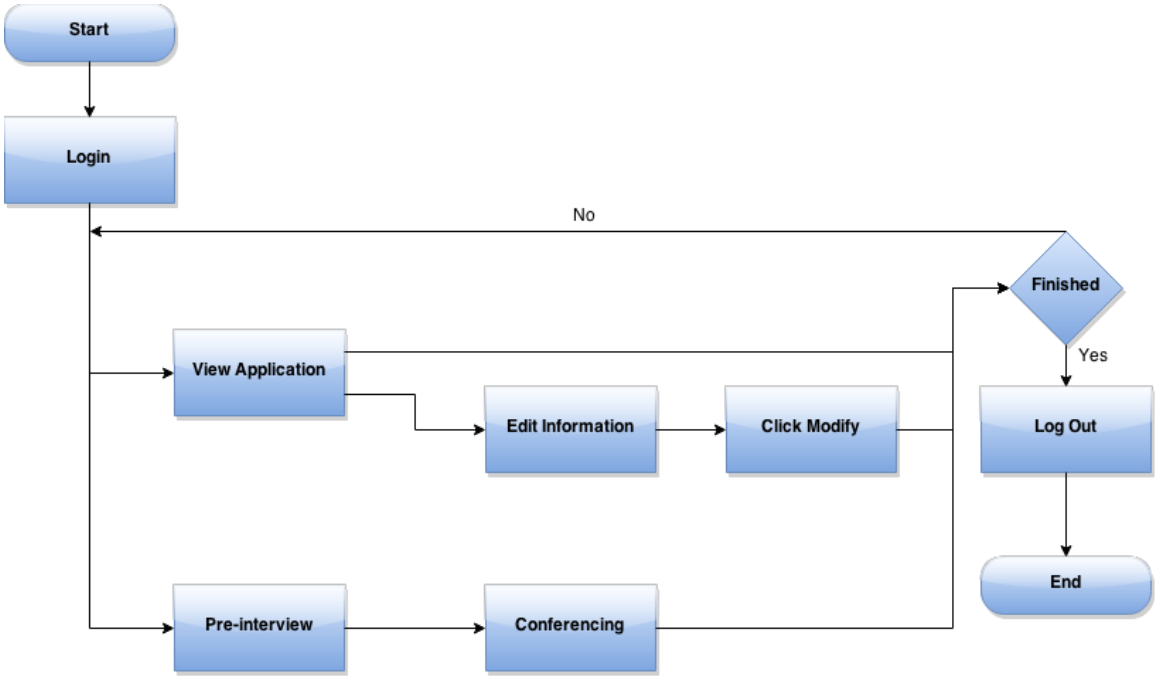
Use Case Name:	Add Walk-in Student	
Actor(s):	Reviewer/Helper	
Description:	Add hard disk locally stored walk-in student record which does not exist on the online module server when the copy of student information is downloaded	
Reference:	PIIS-009	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor clicks "Add Walk In Student" in "Add/Edit Walk-in Student" window	
		Step 2: Display "Add Walk In Student" Window
	Step 3: Enter the student information, then clicks ok.	
		Step 4: Conclude the use case by closing "Add Walk In Student" Window and saving the student information record in local copy of student applicant information.
Alternative Courses:	Step 3: Conclude the use case by closing "Add Walk In Student" Window without saving if cancel is clicked.	
Pre-condition	Student applicants' information is loaded.	
Post-condition	Walk in student added	
Assumption	None	

Use Case Name:	Edit Walk-in Student	
Actor(s):	Reviewer/Helper	
Description:	Edit hard disk locally stored walk-in student record which does not exist on the online module server when the copy of student information is downloaded	
Reference:	PIIS-010	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor select a student and then clicks "Edit Walk In Student" in "Add/Edit Walk-in Student" window	
		Step 2: Display "Edit Walk In Student" Window
	Step 3: Edit the student information for the corresponding student, then clicks ok.	
		Step 4: Conclude the use case by closing "Edit Walk In Student" Window and saving the student information record in local copy of student applicant information.
Alternative Courses:	Step 2: If nothing selected, prompt "Nothing Selected" to conclude the use case. Step 3: Conclude the use case by closing "Edit Walk In Student" Window without saving if cancel is clicked.	
Pre-condition	Student applicants' information is loaded.	
Post-condition	Walk in student edited	
Assumption	None	

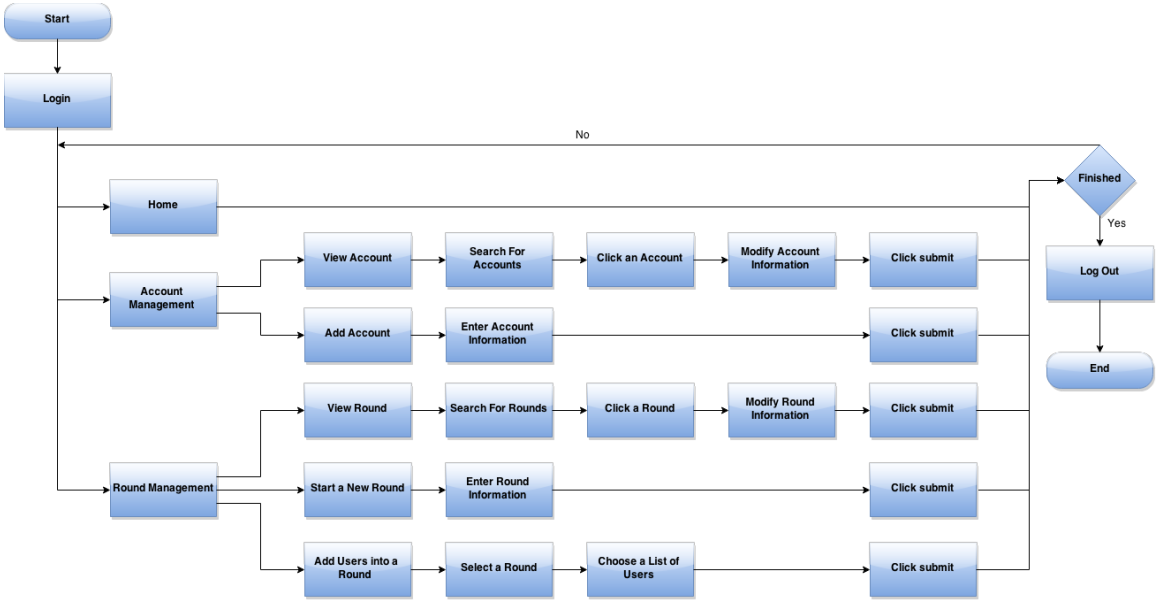
Use Case Name:	Draw Question From Category (Offline Module)	
Actor(s):	Reviewer/Helper	
Description:	Draw question from selected category of questions when conducting interview and editing onsite comment	
Reference:	PIIS-011	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor enters the number of questions to draw, select the category to draw from and then clicks "draw" in "Edit Onsite Comment" window	Step 2: Display "Draw Question From Category" Window with list of randomly drawn question from the category and the detailed question and answer of the selected one.
Alternative Courses:	Step 2: If there is no category, the system should conclude the use case without response. If the user clicks Add to Favorite after the display of the window, the system will add the question to the favorite list, then prompt "Added to favorite" to conclude the use case.	
Pre-condition	Student applicants' information is loaded.	
Post-condition	Walk in student edited	
Assumption	None	

Use Case Name:	Draw Question From Favorite (Offline Module)	
Actor(s):	Reviewer/Helper	
Description:	Draw question from favorite list of question when conducting interview and editing onsite comment	
Reference:	PIIS-012	
Typical Course of Events:	Actor's action	System response
	Step 1: Initiate the use case when actor enters the number of questions to draw and then clicks "draw" in "Edit Onsite Comment" window	Step 2: Display "Draw Question From Favorite" Window with list of randomly drawn question from the favorite list and the detailed question and answer of the selected one.
Alternative Courses:	Step 2: If the user clicks Drop Favorite after the display of the window, the system will frop the question from the favorite list, then prompt "Dropped favorite" to conclude the use case.	
Pre-condition	Student applicants' information is loaded.	
Post-condition	Walk in student edited	
Assumption	None	

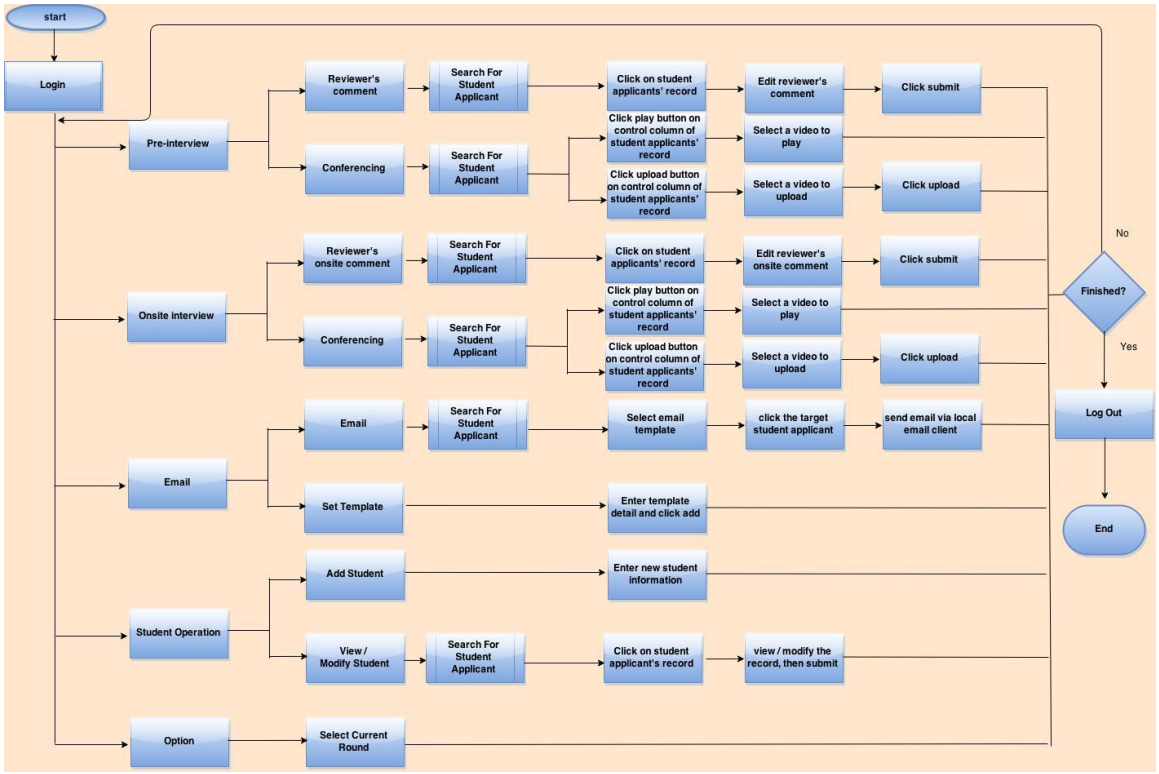
APPENDIX XIII: Flow Chart of "Student"



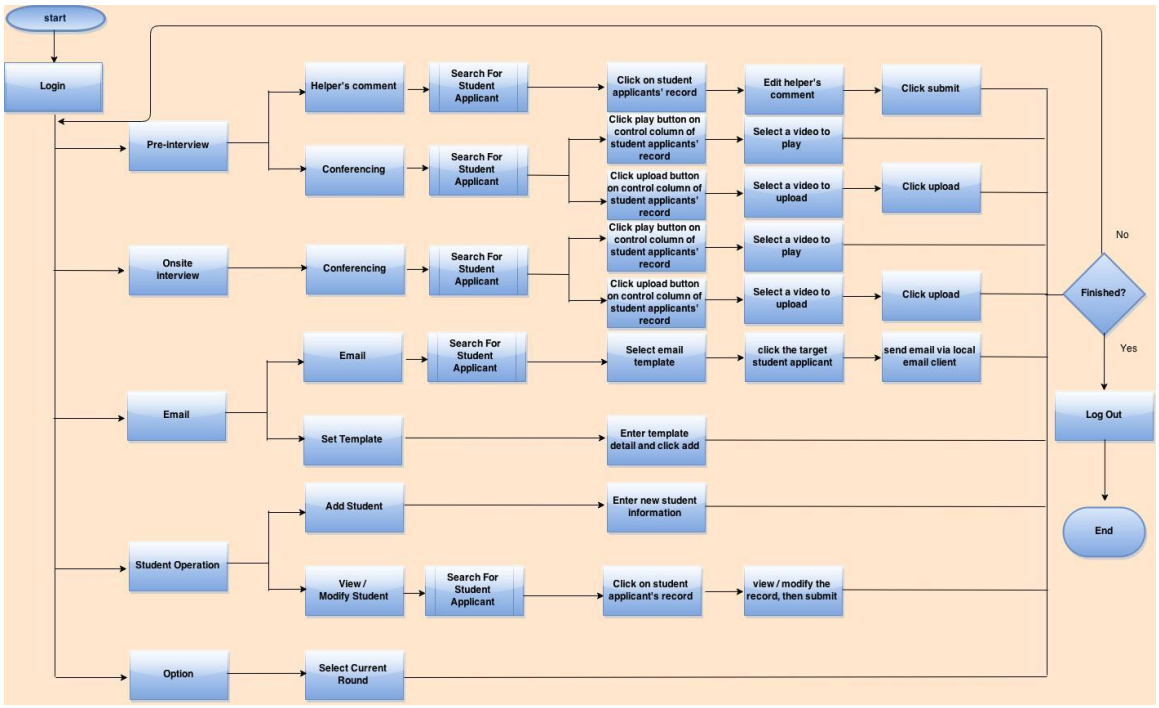
APPENDIX XIV: Flow Chart of "Root"



APPENDIX XV: Flow Chart of "Reviewer"



APPENDIX XVI: Flow Chart of "Helper"



APPENDIX XVII: Test Case

1 Introduction

This document describes the testing procedures for the system, on Chrome and Firefox browser.

1.1 Scope

This document is to outline the testing procedure for the testing of MPhil/PhD Admission Interview System, which is a product from Final Year Project for Department of Computer Science. The University of Hong Kong in 2013-2014. MPhil/PhD Admission Interview System is an online system suppose to browse by Chrome or Firefox. Its offline module can be installed I both Mac and windows. The purpose of the testing is to test whether the application returns any unexpected results in different situation. Therefore, test cases are included to assist in this testing.

2 Detail

In this section, detail descriptions of testing steps are provide.

2.1 General description of testing procedure

Before and after executing the test cases, tester should perform the following steps to install the product, perform testing and record the result:

2.1.1 Install the offline module
2.1.2 Connect the network with HKUVPN
2.1.3 Browse https://fyp14003s1.cs.hku.hk/InterviewSystem/login with Chrome and Firefox
2.1.4 Run the test cases in 2.2 one by one and record the result – either success or failed.

2.2 Test case

2.2.1 Video Conferencing

2.2.1.1 Pre-interview

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Pre-interview” on the top bar
3. Click “Conferencing” on the left bar
4. Click “conferencing” at the “Controls” column of the student you want to conference with.
5. Log in the selected student account
6. Click “Pre-interview” on the top bar in the student account
7. Conferencing start

2.2.1.2 Onsite-interview

Steps:

1. Log in an account with role equals to “reviewer” /

"helper"
2. Click "Onsite-interview" on the top bar
3. Click "Conferencing" on the left bar
4. Click "conferencing" at the "Controls" column of the student you want to conference with.
5. Log in another account with role equals to "reviewer"
6. Click "Onsite-interview" on the top bar
7. Click "Conferencing" on the left bar
8. Click "conferencing" at the "Controls" column of the same student you chose at the first reviewer account.
9. Conferencing start

2.2.2 Video Recording

Steps:

1. Log in an account with role equals to "reviewer" / "helper"
2. Click "Onsite-interview" on the top bar
3. Click "Conferencing" on the left bar
4. Click "record" at the "Controls" column of the student you want to record the interview process.
5. Click "record" button to start the recording
6. Click "stop" to stop the recording

2.2.3 Merge media files

Steps:

1. Use a Chrome browser
2. Log in an account with role equals to "reviewer" / "helper"
3. Click "Onsite-interview" on the top bar
4. Click "Conferencing" on the left bar
5. Click "record" at the "Controls" column of the student you want to record the interview process.
6. Click "record" button to start the recording
7. Click "stop" to stop the recording
8. Click "upload " to upload the file

2.2.4 Conferencing Jot notes

2.2.4.1 Pre-interview

Steps:

1. Log in an account with role equals to "reviewer" / "helper"
   Click "Pre-interview" on the top bar
2. Click "Conferencing" on the left bar
3. Click "conferencing" at the "Controls" column of the student you want to conference with.

4. Input some notes in the text area
5. Click “jot” button
6. “jot success” will appear below the jot button

2.2.4.2 Onsite-interview

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Onsite-interview” on the top bar
3. Click “Conferencing” on the left bar
4. Click “conferencing” at the “Controls” column of the student you want to conference with.
5. Input some notes in the text area
6. Click “jot” button
7. “jot success” will appear below the jot button

2.2.5 Play Video

2.2.5.1 Pre-interview

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Pre-interview” on the top bar
3. Click “Conferencing” on the left bar
4. Click “play” at the “Controls” column of the student you want to play his video
5. Select a video in the video list
6. Play it

2.2.5.2 Onsite-interview

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Onsite-interview” on the top bar
3. Click “Conferencing” on the left bar
4. Click “play” at the “Controls” column of the student you want to play his video
5. Select a video in the video list
6. Play it

2.2.6 Upload Video

2.2.6.1 Pre-interview

Steps:

1. Log in an account with role equals to “reviewer” / “helper”

2. Click “Pre-interview” on the top bar
3. Click “Conferencing” on the left bar
4. Click “upload” at the “Controls” column of the student you want to upload video for him
5. Choose a file to upload
6. Click “Upload File” Button
7. The file is uploaded when the progress bar is 100%
8. Click “Cancel” button to back to the previous page

2.2.6.2 Onsite-interview

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Onsite-interview” on the top bar
3. Click “Conferencing” on the left bar
4. Click “upload” at the “Controls” column of the student you want to upload video for him
5. Choose a file to upload
6. Click “Upload File” Button
7. The file is uploaded when the progress bar is 100%
8. Click “Cancel” button to back to the previous page

2.2.7 E-mail

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “E-mail” on the top bar
3. Choose the a template or input something in the text area
4. Choose some student by check the checkbox at the “Controls” column
5. Click “send” below the table

2.2.8 Set e-mail template

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “E-mail” on the top bar
3. Click “Set Template” on the left bar
4. Fill the form
5. Click “add”

2.2.9 Display which column and student on a table

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Onsite-interview” on the top bar
3. On hover a table cell

2.2.10 Alert box for conferencing

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Pre-interview” on the top bar
3. Click “Conferencing” on the left bar
4. Click “conferencing” at the “Controls” column of the student you want to conference with.(Do not close the browser or logout)
5. Log in the selected student account

2.2.11 Export Csv

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Onsite-interview” on the top bar
3. Click “Hide Search Form”
4. Fill the form
5. Click “export as xsl”

2.2.12 Print interviewee info

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Student Operation” on the top bar
3. Click “View/Modify Student” on the left bar
4. Choose a student by click the student’s row cell
5. Click “print student info” in the bottom

2.2.13 Teachers’ onsite comment analysis

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Analysis” on the top bar
3. Click “Teachers’ Comments Analysis” on the left bar
4. Select the students by clicking them
5. Click “Analysis” button

2.2.14 Cross Year analysis (form analysis chart)

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Analysis” on the top bar
3. Click “Cross Year Analysis” on the left bar
4. Select a “Choose a criteria”

2.2.15 Form analysis input

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Analysis” on the top bar
3. Click “Form Analysis” on the left bar
4. Select a student by click the student row
5. Fill the form
6. Click “Modify” button

2.2.16 Form analysis

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Analysis” on the top bar
3. Click “Form Analysis” on the left bar

2.2.17 University ranking

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Analysis” on the top bar
3. Click “University Ranking” on the left bar
4. Upload a csv file
5. Click “submit” button

2.2.18 Form analysis ranking

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Analysis” on the top bar
3. Click “Form analysis ranking” on the left bar
4. Select different attributes to show the ranking

2.2.19 Form analysis comparison

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Analysis” on the top bar
3. Click “Form analysis comparison” on the left bar
4. Select two students by click the student row
5. Click “Submit selected student and see the result”

2.2.20 Chart analysis (academic performance and student status in current round)

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Analysis” on the top bar
3. Click “Charts” on the left bar

2.2.21 Form analysis formula modifying

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Analysis” on the top bar
3. Click “Form Analysis” on the left bar
4. Click “click here” which above the “Hide Search Form”
5. Fill the form
6. Click “modify” button

2.2.22 Add students

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Student Operation” on the top bar
3. Fill the form
4. Click “create” button

2.2.23 Implementation of root & student

2.2.23.1 View/modify account

Steps:

1. Log in the root account
2. Click “Account Management” on the top bar
3. Select a student by click the student row
4. Fill the form
5. Click “submit” button

2.2.23.2 Add Account

Steps:

1. Login the root account
2. Click “Account Management” on the top bar
3. Click “Add Account” on the left bar
4. Fill the form
5. Click “Submit” button

2.2.23.3 View Round

Steps:

1. Login the root account
2. Click “Round Management” on the top bar
3. Select a round by click a round’s row
4. Fill the form
5. Click “Submit” button

2.2.23.4 Start a new round

Steps:

1. Login the root account
2. Click “Round Management” on the top bar
3. Click “Start a new round” on the left bar
4. Fill the form
5. Click “Submit” button

2.2.23.5 Add user into a round

Steps:

1. Login the root account
2. Click “Round Management” on the top bar
3. Click “Add user into a round” on the left bar
4. Select a round by click a round’s row
5. Select users by check the checkboxes
6. Click “Add to the round” button

2.2.24 Commenting functionality

2.2.24.1 Pre-Interview

2.2.24.1.1 Helper mode

Steps:

1. Login an account with role equals to “helper”
2. Click “Pre-interview” on the top bar
3. Select a student by click a student row
4. Fill in the form
5. Click “Submit”
6. Comment edited

2.2.24.1.2 Reviewer mode

1. Login an account with role equals to “reviewer”
2. Click “Pre-interview” on the top bar
3. Select a student by click a student row
4. View the comment

2.2.24.2 Onsite-interview

2.2.24.2.1 Helper mode

Steps:

1. Login an account with role equals to “helper”
2. Click “Onsite-interview” on the top bar
3. Select a student by click a student row

4. Fill in the form
5. Click “Submit”
6. Comment edited

2.2.24.2.2 Reviewer mode

Steps:

1. Login an account with role equals to “reviewer”
2. Click “Onsite-interview” on the top bar
3. Select a student by click a student row
4. Fill in the form
5. Click “Submit”
6. Comment edited

2.2.25 Search engine for student records

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Onsite-interview” on the top bar
3. Click “Hide Search Form”
4. Fill the Form

2.2.26 Preliminary Filtering feature

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Pre-interview” on the top bar
3. Click “Preliminary Filtering” on the left bar
4. Fill the form
5. Click “submit” button
6. Follow the instruction the system show to the user
7. Click “Remove from filtered list” button to remove the record from the list
8. Click “View Applicant Details” button to view the record

2.2.27 Question bank

2.2.27.1 Add question

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Question Bank” on the top bar
3. Click “Add Question” on the left bar
4. Fill the form
5. Click “Submit” button

2.2.27.2 Manage Questions

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Question Bank” on the top bar
3. Click “Manage Questions” on the left bar
4. Fill the form
5. Click “Draw Question” button

2.2.27.3 Manage Favorite

Steps:

1. Log in an account with role equals to “reviewer” / “helper”
2. Click “Question Bank” on the top bar
3. Click “Manage Favorite” on the left bar
4. Enter the No. of questions to draw
5. Click “Draw Question”

2.2.28 Offline module

2.2.28.1 Download round

Steps:

1. Connect to the Internet
2. Set “Load from:” to “Online Module for onsite interview”
3. Login with correct username and password
4. Click “Download” button
5. Click “Y” button
6. Select a round to download
7. Click “Confirm” button
8. “Download complete” will pop up if download success
9. Select the current interview site
10. Click “confirm” button
11. If download not success, error message will be shown on the panel
12. If select “No” button in any pop up, it will back to the download panel

2.2.28.2 Filter list

Steps:

1. Login offline module
2. Click “Edit Comment / Manage Video to Upload” button
3. Click “filter” button
4. Fill the form

5. Click “confirm” button
6. The list will be filtered according to the filled form.
7. If click “No” button, back to the previous panel.

2.2.28.3 Change column order

Steps:

1. Login offline module
2. Click “Edit Comment / Manage Video to Upload” button
3. Click “column order” button
4. Select a column name
5. Change that column order by click “Up” and “Down” button
6. Click “confirm” button
7. See if the column order changed correctly
8. If click “No” button, back to the previous panel.

2.2.28.4 Edit Onsite comment

2.2.28.4.1 Helper mode

Steps:

1. Login offline module in helper account
2. Click “Edit Comment / Manage Video to Upload” button
3. Select a record by click that record
4. Click “Edit Onsite comment”
5. Select a reviewer
6. Click “confirm” button
7. Edit the comment
8. Click “Ok” button
9. See if the comment edited
10. click any Cancel button will back to previous page

2.2.28.4.2 Reviewer mode

Steps:

1. Login offline module in reviewer account
2. Click “Edit Comment / Manage Video to Upload” button
3. Select a record by click that record
4. Click “Edit Onsite comment”
5. Edit the comment
6. Click “Ok” button
7. See if the comment edited
8. click any Cancel button will back to

previous page

2.2.28.5 Edit video List

2.2.28.5.1 Add video

Steps:

1. Login offline module
2. Click “Edit Comment / Manage Video to Upload” button
3. Select a record by click that record
4. Click “Edit Video List” button
5. Click “Add Video” button
6. Select a mp4 file
7. The select mp4 file will be shown on panel

2.2.28.5.2 Remove video

Steps:

1. Login offline module
2. Click “Edit Comment / Manage Video to Upload” button
3. Select a record by click that record
4. Click “Edit Video List” button
5. Select a video record by click that record
6. Click “Remove Video” button
7. The selected recorded will be removed from the panel

2.2.28.6 View student info

Steps:

1. Login offline module
2. Click “Edit Comment / Manage Video to Upload” button
3. Select a record by click that record
4. Click “View student info” button
5. Student info shown on the panel

2.2.28.7 Add/edit Walk In Student

2.2.28.7.1 Add walk in student

Steps:

1. Login offline module
2. Click “Edit Comment / Manage Video to Upload” button
3. Click “Add/Edit Walk In Student”

button
4. Click “Add Walk In Student” button
5. Fill in the form
6. Click “ok” button
7. The Walk in student add in the panel

2.2.28.7.2 Edit Walk In Student

Steps:

1. Login offline module
2. Click “Edit Comment / Manage Video to Upload” button
3. Click “Add/Edit Walk In Student” button
4. Select a record by click the record
5. Click “Edit Walk In Student” button
6. Fill in the form
7. Click “ok” button
8. The selected record is edited

2.2.28.8 Upload

Steps:

1. Login offline module
2. Click “Upload to Online Module” button
3. Click “Start Upload” button
4. Report the upload is success or not